2 Phillyrea; latifolia; lævis. *C. B. P.* 476. *Phillyrea, Mahaleb Serapionis.* Lugd. 154.

3. Phillyrea; latifolia, ſpinoſa. *C. B. P.* 416. *Phillyrea, folio Ilicis.* J. B. 1. 541.

4. Phillyrea; latifolia; ſpinoſa. *C. B. P. Longiori folio Alaterni. Ind.* 248.

5. Phillyrea; folio leviter ſerrato. *C. B. P.* 476.

6. Phillyrea; folio magis ſerrato, ſubrotundiori. *Ind.* 248.

7. Phillyrea; folio Liguſtri. *C. B. P.* 476. *Tourn. Inſt.* 596. *Boerh. Ind. a.* 2. 215. *Phillyrea.* Offic. *Phillyrea latiuſculo folio.* J. B. 1. 539. Raii Hiſt. 2. 1585. *Phillyrea latiore folio.* Ger. 1209. Emac. 1395. *Phillyrea latifolia foliis fere non ſerratis.* Park. Theat. 1443. MOCK PRIVET.

The Leaves are drying and aſtringent, and are very much commended for Ulcers in the Mouth. *Dale.*

8. Phillyrea; anguſtifolia; prima. *C. B. P.* 476. *Boerh. Ind. alt. Plant. Vol.* 2.

Many confound the *Phillyrea* of *Dioſcorides* with the *Philyra* of *Theophraſtus*; others, rightly in my Opinion, diſtinguiſh them. *J. Bauhine* proves the *Macaleb* of the *Arabians* to be the *Phillyrea* of *Dioſcorides.* But whether the *Mahaleb*, or *Phillyrea*, be the ſame Tree which is now commonly known by that Name, is a Queſtion. *Rauwolfius* writes, that he ſaw at *Aleppo*, in the Spicery-ſhops, ſmall white Seeds, which they call *Machaleb*, ſurrounded with an hard Cortex, ſomewhat long, and acuminated, and cover'd with a thin Membrane, after the manner of Piſtaches; theſe Seeds they uſe in the Compoſition of their ſweet-ſcented Soap. And the Monks who have commented on *Meſue*, write that *Mahaleb* is a very common Shrub in *Syria*, thorny, and with Leaves like the Olive-tree; that it bears Fruit in Cluſters on the Branches, like the Lentisk, but ſomewhat bigger; from whence the *Syrians* expreſs a very fragrant Oil, of which they prepare their ſweet-ſcented Soaps, and ſeveral other Things. But how all this can agree with the common *Phillyrea*, ſays *Ray*, I am at a Loſs to underſtand.

The Leaves of the *Phillyrea*, according to *Dioſcorides*, are aſtringent, like thoſe of the wild Olive-tree; and are therefore proper in thoſe Caſes, which require Aſtriction. Being chewed in the Mouth, they are very good for Ulcers therein; and a Collution of the Mouth with the Decoction has the ſame Effect. The Decoction drank provokes Urine, and the Menſes. What the *Arabians* write of the Virtues of the *Mahaleb*, which *J. Bauhine* ſuppoſes to be the *Phillyrea* of *Dioſcorides*, may be found in *Bauhine*. At preſent the *Phillyrea* is not uſed in Medicine, but, on account of its evergreen Leaves, is of good Ornament in Gardens, being diſpoſed in clipt Hedges, Plots of Evergreen, and by the Sides of Walks. *Raii H. P.*

PHILOCHYMICUS. A Lover of Chymiſtry.

PHILOCOTYCHE. The Name of a Plaiſter, in *Myrepſus*, *Cap.* 136.

PHILOCRATIS *Emplaſtrum.* A Plaiſter deſcribed by *Celſus*, *Lib* 5. *Cap.* 19.

PHILOLAGNOS, φιλόλαγνος, in *Hippocrates de R. V. I. A.* means one addicted to Venery.

PHILOLUTROS, φιλόλυτρος, from φιλὸς, a Friend, and λέτρον, a Bath. A Lover of Bathing. *Hippocrates de R. V. I. A.*

PHILOMEDICA. The Name of a Potion, preſcribed in burning Fevers, for allaying the Thirſt; and deſcribed in *Collect. Chymic. Leidenſ. Cap.* 332.

PHILOMELA, the Nightingale. See LUSCINIA.

PHILONIUM. A kind of ſomniferous, anodyne Opiate; taking its Name from *Philo*, the Inventor. *Galen, de C. M. S. L. Lib.* 9. *Cap.* 4. ſays, that the Antidote of *Philo*, or *Philonium*, was in great Reputation for a long time paſt; and that this Medicine was one of the firſt and moſt antient of its Kind. By Medicines of this Kind, we can underſtand no other than Antidotes, ſuch as *Mithridate*, *Theriaca*, *Hiera*, and the like. I do not believe this Compoſition of *Philo* to be quite ſo antient as Mithridate; but it was, doubtleſs, coeval with the ſimple Hiera, invented by *Themiſon*, who lived under the Reign of *Auguſtus.* The Theriaca was of later Invention, and not begun to be compoſed till the Time of *Nero.* What makes me think, that *Philonium* was ſomewhat later than Mithridate, is, that, among the Virtues which *Philo* aſcribes to his Compoſition, he ſays, it is proper for the Colic. Now this Diſeaſe was not known by that Name, long before the Reign of *Tiberius.* I imagine then, that *Philo* lived under *Auguſtus*, near about the Time of *Themiſon*, and the firſt Diſciples of *Aſclepiades. Galen* may, however, ſpeak of the *Philonium*, as an antient Medicine, becauſe he did not write till about two hundred Years after the Time in which I ſuppoſe it to be invented.

Philo wrote it in *Greek* Elegiacs, and after an enigmatic Manner; ſo that it required to be well verſed in Mythology, or Fable, to be able to conjecture at his Meaning. "Take, ſays he, red "and odorous Hairs of the Youth whoſe Blood is ſtill freſh in "the Fields of *Mercury*; as many Drams as we have of Senſes "[five]; of *Euboic Nauplium*, one Dram; as much of the Killer "of the Son of *Menœtius*, as is contained within the Bellies of the "Ewes. Add thereto twenty Drams of white Flame, and the "ſame Weight of Beans of the *Arcadian* Swine; with one Dram "of the Plant falſely call'd a Root, and which comes from the "Country celebrated on account of *Jupiter Piſſeus.* Write *Pi-*"*um*, and, to the Head of that Word, add the maſculine Ar-"ticle of the *Greeks.* Take ten Drams of this laſt Ingredient, "and carefully mix the Whole with the Works of the Daugh-"ters of the Bull of *Athens.*" You may ſee, in *Galen*, an Explication of this Jargon, which amounts to this: Take of Saffron, Pyrethrum, white Pepper, Henbane, Spikenard, and Opium, the Weight aſſign'd to each Ingredient; and incorporate the Whole with *Attic* Honey. Not only *Galen*, but *Aretæus*, *P. Ægineta*, *Aetius*, *Oribaſius*, and other Authors, mention this Medicine, which is ſtill common at this Day. *Celſus*, alſo, quotes *Philo*, but it is only for a Collyrium, and ſays nothing of his Antidote; tho' it is probable, that it was this *Philo* of *Tarſus*, from whom he borrow'd that Collyrium. *Le Clerc Hiſt. de la Medecine.*

Philonium Perſicum is thus prepared. Take of white Pepper, and white Henbane, each ten Drams; of Opium, Terar Sigillata, each five Drams; Lapis Hæmatites, Saffron, each two Drams and an half; Caſtor, *Indian* Spikenard, Pyrethrum, Pearls, Amber, Zedoary, Doronicum, or elſe Elecampane, Troches of Ramich, each half a Dram; Camphire, a Scruple; Honey of Roſes, fifteen Ounces. Mix them together for an Opiate.

The Roots, the Seeds, the Caſtor, the Spikenard, the Saffron, and the Troches of Ramich, are to be reduced to a Powder together. Then the Seal'd Earth, and the Camphire, are to be pounded together; and the Blood-ſtone, the Pearls, and the Amber, are to be levigated on a Marble, till they are reduced to an impalpable Powder. The Opium muſt be of the beſt Kind, and cut down into ſmall Portions; after which, it is to be beat in a brazen Mortar, with a little Honey of Roſes, till it is reduced to a kind of liquid Paſte. Then boil Honey of Roſes to the Conſiſtence of a thick Syrup; with fifteen Ounces of which intimately mix the Opium, and the Powders, for an Opiate, to be kept for Uſe in a cloſe-ſtopt Veſſel.

This Preparation is proper for ſtopping Hæmorrhages and Fluxes; as, alſo, for preventing Abortion. The Doſe of it is from one Scruple to one Dram.

A Scruple of this Opiate contains Two-thirds of a Grain of Opium; and One-third of a Grain of the Seeds of white Hen-bane.

Half a Dram of the Opiate contains a Grain and half a quarter of a Grain of Opium, and two Grains and an half of the white Henbane-ſeeds.

Two Scruples of the Opiate contain a Grain and an half of Opium, and three Grains of the Henbane-ſeeds.

One Dram of the Opiate contains two Grains and a quarter of a Grain of Opium, and four Grains and an half of the Henbane-ſeeds.

The *Philonium Romanum* is thus prepared.

Take of white Pepper, and white Henbane-ſeeds, each five Drams; Opium, two Drams and an half; Caſſia-bark, one Dram and an half; Smallage-ſeed, one Dram; the Seeds of *Macedonian* Parſley, Fennel, and Candy Carrots, each two Scruples five Grains; Saffron, one Scruple and an half; Spikenard, Pellitory of *Spain*, and Zedoary, each fifteen Grains; Cinnamon, a Dram and an half; Myrrh and Caſtor, each a Dram; Syrup of white Poppies, a ſufficient Quantity, to make the Whole into an Electuary.

This is a Preſcription, originally, of *Nicolaus Myrepſus*; but the firſt Diſpenſatory of the College received it with Euphorbium, as does the *Auguſtan*, which the College has now rejected, it being an Ingredient too hot, and irritating, for inward Uſe. There are ſeveral other Compoſitions of this Denomination taken by the Diſpenſatory-writers from *Meſue*, *Galen*, and others; but they all nearly agree. *Zwelfer*, however, prefers the *Confectio Archigenis* to them all, as a warm Opiate, which is their main Intention. The former Preſcriptions of this were all with Honey, in three times the Quantity of the other Ingredients; but the *Syrupus de Meconio*, as here ordered, is vaſtly preferable, as agreeing ſo much better with the Intention of the Whole. It is a powerful Opiate, and given from ten Grains to two Scruples, to eaſe violent Pains, and procure Sleep. *Quincy.* But, perhaps, this Medicine, and all of this Claſs, may be much better, if prepar'd with Honey.

PHILOPARABOLOS, φιλοπαράβολος. An Epithet, apply'd by *Aſclepiades* to one of the two Methods uſed by him in the Cure of a Phrenſy, and ſignifying *violent* and *dangerous*, in Oppoſition to his other Method, which was ſafer, or, in the Language of *Cœlius Aurelianus*, *non meticuloſus*, and proper for moſt Patients. This *dangerous* and *violent* Method (for that Reaſon called *Philoparabolos*, which is uſed, by *Plutarch*, to ſignify one who deſperately throws himſelf into the midſt of Dangers) conſiſted in exhibiting, at the firſt Viſit, a large Draught of pure or undiluted Wine, mix'd with Sea-water; for, ſays *Aſclepiades*, giving a Reaſon for this Practice, all thoſe Helps and Benefits which accrue to the Sick, in a weak and ſlow Manner, from the Uſe of Muſſum, and ſorbile Liquors, are much more readily and plentifully procured by Wine; for the Exhibition thereof is ſucceeded by a vaſt Fervor, with a Lowering of the Pulſe, and a Repreſſion of the colliquative Sweats, the Wine performing the Office of an univer-

universal Cautery. *Cœlius Aurelianus, Acut. Morb. Lib.* 1. *Cap.* 15.

PHILOXENIAS ANTIDOTUS. The Name of an Antidote, described by *Nicolaus Myrepsus, Sect.* 1. *C.* 239.

PHILTRON, φίλτρον. A Love Potion, or Medicine to excite Love. It, also, imports that Cavity, or Depressure, in the upper Lip, which is situated immediately under the *Septum* of the Nose.

PHILUMENI MEDICAMENTUM. The Name of a Medicine for the Eyes, described by *Oribasius, Collect. Medicinal. L.* 8. *C.* 45.

PHILYPOSTROPHA, φιλυπόστροφα. Whatever cause, or threaten, a Relapse, are thus call'd by *Hippocrates, Prorrhet.* and *Coac. Prænot.*

PHIMOSIS. Sometimes the Præputium, or Foreskin, is so contracted by a violent Inflammation, that it cannot be drawn backward behind the Glans. This Disorder is call'd Phimosis by the *Greeks*, and produces many dangerous Consequences; especially if a virulent Venereal Matter be lodged between the Glans and the Skin; for, by the Contraction of the Skin, those little Ulcers of the Glans, called Chancres, which proceed from impure Copulation, cannot be conveniently cleansed or healed. Nor is it surprising, as *Verduc* observed, that a Gangrene, or Cancer, or, at least, a violent Inflammation of the Glans and Foreskin should arise from this Cause; and, upon account of these Mischiefs, the Penis must either be consumed by the Ulcers, or removed by the Knife. The Patient, generally, cannot void his Urine without extreme Pain, because of the Corrosion of the Skin and Glans. The general Cause of a Phimosis is, by Physicians, rightly ascribed to impure Coition. For whilst the virulent Matter, which had been lodged in the Sinuses of the Vagina, continues between the Skin and Glans, the Foreskin, especially if it should be naturally long, or tight, can hardly escape being swell'd with an Inflammation, and a Phimosis must be induced. Some, however, have the Foreskin naturally so long, and so straiten'd, that the Glans can either be not at all, or very little uncover'd; but as this neither occasions Trouble in discharging the Urine, nor any Impediment in Procreation, it requires no Aid from the Surgeons, unless it be attended with an Inflammation, violent Pain, or any remarkable Inconvenience in Coition. Those who have their Foreskin naturally very long, are much more easily infected by impure Embraces, than others, as we learn both from Reason and Experience.

If this Disorder is occasion'd by no Venereal Taint, it is cured by bathing the Penis, a sufficient Time, in warm Water: But, if it proceeds from a Venereal Infection, proper internal Medicines must be exhibited; and the Pain may be alleviated, and the Ulcers heal'd, by the following Method. In order to wash out the acrimonious morbid Humours lodged under the Skin, let warm Water, or rather, a Decoction of Barley, mix'd with Honey of Roses, be frequently injected with a Syringe, between the Skin and the Glans. To discuss the Tumor, apply, externally, an emollient and digestive Fomentation, or Cataplasm, round the tumefied Part of the Penis; and, if the Inflammation be severe, Bleeding should not be omitted. After these Measures are duly taken, we may endeavour to draw back the Prepuce. But if the Tumor, and violent Exulceration, of the Glans render this Attempt impracticable, if the Disorder increases, or, lastly, if the Prepuce was naturally long, and could not be drawn back before the Infection, Recourse must be had to the Knife.

In this Case, there are two Methods of Operation. 1. Let the End of the Prepuce be drawn as far forwards as possible, and let an Assistant hold the cover'd Glans in his Fingers. Let the Operator, with his Left Thumb, press back the Glans cover'd with the Skin, and then, with a Knife, or Scissars, let him extirpate all that Part of the Skin which projects beyond his Thumb, much in the same manner with the *Jewish* Circumcision. Thus may the most straiten'd Part of the Skin be easily drawn back; and, the Glans being uncover'd, the Ulcer may more expeditiously be cleansed and heal'd.

2. The other Method is thus perform'd. The superior Part of the Prepuce must be drawn up by the Fingers, and a Pair of Probe-scissars introduced; then an Incision must be made so far in the contracted Skin, as may be sufficient for uncovering the Glans. *Guillemeau, Palfyn*, and others, prefer a particular Knife for this Use, represented *Tab.* XLVII. *Fig.* 4. But why this Knife should be crooked, or why a strait Knife may not as well serve the Purpose, I cannot understand. After this longitudinal Incision, some Surgeons cut off, with the Scissars, as much of the End of the Prepuce, as appears superfluous. A copious Discharge of Blood succeeds this Operation; nor should it be suddenly stopped, but rather suffer'd to flow, as long as the Strength of the Patient will permit, in order to prevent an Inflammation. Then dress with dry Lint, and apply a proper Compress and Bandage; and proceed, afterwards, as in the Cure of other Wounds. Besides the Cautions to be observed in the first Method of Cure, particular Care must be taken, that, in healing the Wound, the Extremity of the Prepuce be not too much contracted; by which means the Patient would be again exposed to the same Disorder. Sometimes, by dividing the Prepuce, the Glans is drawn back by the Frenum, and the Penis becomes incurvated; in which Case, the Frenum must be cut with the Knife, or Scissars. If a Gangrene affects the Glans, as in an Instance related by *Verduc*, it is necessary to penetrate to the sound Parts by frequent Scarification, and to apply a Fomentation of *Unguentum Ægyptiacum*, and Treacle, dissolved in camphorated Spirit of Wine, till the Gangrene disappears. But the stubborn Ulcers, or Chancres, can scarcely be removed without the Use of internal mercurial Medicines; and, sometimes, not without a slight Salivation. Nor must I omit to mention an Instrument contrived by my Friend, Dr. *Trew*, for this Purpose, and represented in *Tab.* XLVII. *Fig.* 5. whose Plates A A, being introduced under the Skin, and gradually distended by the Screw B, they, by their Elasticity, gently dilate the contracted Skin; and thus may the Glans be denudated, without the Help of a Knife. But I question whether this Instrument will always answer the Intention.

PHLASMA, φλάσμα. A Contusion, or Collision.

PHLEBION, φλεβίον. A small Vein.

PHLEBODONODEA, φλεβοδονώδεα, an odd, and sort of foreign, and, for that Reason, obscure Term in *Hippocrates, 1 Prorrhet.* 101. and *Coach.* 20. *Galen* explains it of the Veins or Arteries, agitated by the excessive Heat of the Blood; which happens under a great Effervescence of the Humours, or violent Pains of the Head, when the Veins and Arteries at the Temples, as well as the Jugulars, are subject to a sort of Concussion and Subsultus; so that the Word, by Etymology, imports as much as φλέβες δονέμενοι (*Phlebes donumenoi*) *Veins agitated.* Some, he says, read φλεβοτονώδεα (*Phlebotonodea*), understanding thereby a Distention of the Veins. Others, to avoid all Ambiguity, write it φλεδονώδεα (*Phledonodea*), deriving it from φλεδόνες (*Phledones*), expounding the Word by παραληρήσεα (*paralerunta*), and apply it to Persons in a Delirium: For φλεδόνες are expounded in the *Exegesis*, by φλυαρίαι (*phluariæ*), *Trifles, Follies*, and λῆροι (*Leri*), *idle Amusements of delirious Persons.* In 4 *Epid.* we read, that *The Hypochondrium appeared distended,* φλεβονώδεα τὸ ὑπόχον. But we ought, says *Foesius*, to read the Word φλεβοδονώδεα, or φλεβοτονώδεα, or φλεδονώδεα, and to understand it of a Distention of the Hypochondrium, after the manner of the Veins and Arteries, when under a Distention and Agitation, or Concussion from the Heat and Effervescence of the Blood.

PHLEBOPALIE, φλεβοπαλίη. The Vibration, or Pulsation, of an Artery.

PHLEBORRHAGIA, φλεβορραγία, from φλὲψ, a Vein; and ῥήσσυμι, to break. A Rupture of a Vein.

PHLEBOTOMIA, φλεβοτομία, from φλὲψ, a Vein; and τέμνω, to cut. Phlebotomy.

There is not a more excellent, instantaneous, and efficacious Remedy for removing various Diseases, both of the acute and chronical Kind, than Venesection, prudently and cautiously used; for some violent Disorders, of the most dangerous Nature, arise from a Redundance of Blood; from a Suppression of its critical Evacuations from the Uterus in Women; and a Defect or Interruption of the hæmorrhoidal Discharge in Men. A Plethora, by retarding and stopping the free and equable Circulation, lays a Foundation for Impurities of the Humours, Stagnations, Infarctions, Obstructions, Extravasations, and Ruptures of the Vessels: For whilst the Blood, by its too great Quantity, strongly resists the contractile and elastic Force of the Heart, Arteries, and other Vessels, its progressive Motion through the whole Body is not only retarded, so that it becomes thick, and fit for generating Infarctions, and Obstructions, the fruitful Sources of chronical Disorders, but, also, in delicate Patients, and highly nervous Parts, by exciting spasmodic Strictures, it induces an Inequality in the Circulation of the Humours, and violent and impetuous Congestions, to some of the nobler Parts, which lay a Foundation for terrible Disorders in the Head, Breast, and Præcordia: These dangerous Disorders are not only prevented, but presently relieved, by Venesection seasonably and duly instituted, especially in Patients who abound with Blood, have large and full Vessels, or who labour under a Suppression of the Menses, or Hæmorrhoids: When in the Spring, and about the Equinox, the Air, on account of the Nearness of the Sun to our Climate, becoming thin and rare, produces a violent Expansion in the Blood, there is great Danger of those Diseases which arise from a Plethora, as *Hippocrates* justly observes; so that, before these Seasons come on, it is expedient to lessen the Redundance of the Blood by Venesection, and by that means prevent the approaching Disorders: Nor is it absolutely necessary we should always accurately observe these equinoctial Seasons; for, when the Quantity of congested Blood requires a more speedy and expeditious Evacuation, or when, about the End of *February*, and Beginning of *March*, the serene and tepid State of the Atmosphere produces an Expansion and Turgescence of the Blood, which prove injurious to its progressive Motion, we are not to wait for, but, without Hesitation, to anticipate, the Equinox. I have known some, who from an ill-tim'd Adherence to their usual Custom, have delay'd Venesection till the Equinox, whilst in the mean time, the Plethora increasing, they died of an apoplectic Fit before that time: Nor are we to listen to those who affirm, that Venesection is only proper at certain Periods of the Moon, or when certain Conjunctions of the Stars happen: But we are boldly,

boldly, and without any Scruple, to take Blood from plethoric Patients, under all Phaſes of the Moon, and every Conjunction of the Stars, eſpecially if the Atmoſphere is ſerene and calm: Thoſe, alſo, who abound with Blood, ought to uſe Veneſection about the autumnal Equinox, leſt the Blood ſhould, by the Winter Cold, be inſpiſſated, and become ſordid, the Excretions being diſturbed by the Inclemency and Variation of the Weather; by which means a Foundation is laid for thoſe Diſorders which proceed from an Impurity and Stagnation of the Humours. Some, who greatly abound in Blood, ought to preſerve themſelves from Diſorders, by uſing Veneſection thrice a Year, that is, in the Beginning of *March*, and in the Ends of *May* and *September*.

As a Redundance of Blood indicates Veneſection, a Penury of it, and a Defect of Strength, contra-indicate this Operation. A Redundance of Blood is ſufficiently known, from the Repletion of the Veſſels, the Largeneſs of the Pulſe, the luxurious Diet, the quiet and calm Method of Life, and the Intermiſſion of any critical, natural, or artificial Evacuation; for, when all theſe Circumſtances concur, we may ſafely and boldly uſe Veneſection. On the contrary, when the Body is infirm and emaciated, and the Pulſe weak, in conſequence of a Want of Blood and Strength, Veneſection is abſolutely to be condemn'd, unleſs *we intend to do an immediate Miſchief to the Patient*; for the Strength of the Pulſe depends upon the large and briſk Impetus, with which the Blood is convey'd from the Left Ventricle of the Heart into the large arterial Tube: Now the Strength of the Heart to perform this Expulſion, depends upon the free and ſufficient Motion of the Blood through the Coronary Veſſels into the Subſtance of the Heart, as, alſo, on the Influx of the nervous Fluid into the Fibres of the Heart: When, therefore, the Pulſe is weak, ſmall, and languid, from too ſcanty an Influx of the nervous Fluid, and a laudable Blood, and too weak an Impulſe of the Blood into the Arteries, it is highly prejudicial to open a Vein in any Patient, or in any Diſorder, becauſe it more exhauſts the Blood and Strength, which are already too much impaired.

Thoſe Phyſicians, therefore, err, who order Veneſection either in the Decline of the Diſeaſe, or in Caſes where one Diſeaſe ſucceeds another, as it happens, ſometimes, in Fevers, or violent Hæmorrhages. Nothing is more frequent in Practice, than to obſerve a Suppreſſion of the Menſes in Women, who ſurmount any Diſorder which conſumes their Blood and Strength. But, in this Caſe, we are not, in order to provoke the Menſes, to preſcribe Emmenagogues, or Evacuations of Blood; but we are rather by Analeptics, and a rich Diet, to generate a freſh Stock of laudable Blood and Humours.

A Defect of Strength, ſometimes, ariſes not from a Penury, but from a Redundance, of Blood: We often perceive a Slowneſs and Weakneſs in plethoric young Perſons and Adults, who were before briſk and active. In plethoric Patients we, alſo, obſerve an unuſual Languor, both of Body and Mind, a Defect of Sleep, and a preternatural Expanſion of the Arteries: In this Caſe, it is expedient to remove the ſuperfluous Maſs of Blood, which, by its Quantity, hinders the ſyſtaltic Motion of the Arteries, immediately after which the Pulſe becomes more frequent and ſtrong. But the skilful Phyſician muſt diſtinguiſh ſuch an Oppreſſion of the Strength, when preſent, and ariſing from a Redundance of Blood, from that Weakneſs which draws its Origin from a Penury thereof.

After Veneſection, the ſalutary Excretions of Blood, and the Evacuations by Stool, Sweat, and Urine, ſucceed better, and more freely, than they did before; as all the ſalutary Excretions depend upon the quick or ſlow, the briſk or languid, Circulation of the Blood: Hence it is obvious, that if, by a Redundance of the Blood, its progreſſive Motion, together with the Excretions, is retarded, the diminiſhing the Plenitude of the Veſſels muſt increaſe its Circulation, render it more fluid, free the Paſſages of the excretory Ducts, and convey the Blood more freely and copiouſly to the Emunctories, that thus the Excretions may be the better carried on.

Hence I have often obſerved, that a Suppreſſion of the Menſes has ſoon been removed, by opening a Vein in the Foot. I, alſo, know ſeveral Inſtances, in which the hæmorrhoidal Diſcharge, after having been a long time ſtopt, has been happily reſtored by Veneſection.

It is certain, from Experience, that in plethoric Patients, and thoſe labouring under ſpaſmodic Diſorders, an aqueous and limpid Urine is diſcharged with Difficulty; but, immediately after Veneſection, it is evacuated more copiouſly, and more deeply tinctured. *Hippocrates*, alſo, in *Sect. 6. Aph.* 36. informs us, that "Phlebotomy removes a Difficulty of Urine; and, for that Purpoſe, opens the Veins of the inferior Parts of the Body." *Riverius*, alſo, in *Cent.* 1. *Obſ.* 1. & 48. & 49. affirms, that, by Veneſection, aqueous Urine has been render'd of a deeper Colour.

I have, alſo, frequently found, that in hypochondriac Patients, who are generally coſtive, the Body has been render'd ſoluble by Veneſection: The Reaſon of which is certainly this; that in the hypochondriac Diſorder, by reaſon of the difficult Paſſage of the Blood through the Meſentery and Liver, the Veſſels are too copiouſly filled with Blood; and, by reaſon of their preternatural Diſtention, Spaſms are produced in their Coats, and their peri-ſtaltic Motion is injured; in conſequence of which, neither the Fæces, nor the Flatulencies, are duly evacuated by the Anus: But, by ſeaſonably opening a Vein in the Foot, or, as I have often obſerved, by recalling the hæmorrhoidal Diſcharge, by the Application of Leeches to the Veins of the Anus, the Circulation of the Blood through the Veſſels of the inteſtinal Coats is render'd free; a due Strength and Motion is reſtored to the Inteſtines themſelves; and the Fæces are more regularly and naturally diſcharged.

Veneſection is not only often uſeful to old Perſons; but, alſo, powerfully contributes to Longevity, or the Protraction of their Lives: For it is a common, though a palpable Error, to affirm, that Veneſection is abſolutely improper in Old-age; as if Perſons at this Period of Life were ſo far from labouring under a Redundance of Blood, that they were rather afflicted by a Deficiency of that Fluid, and a Want of Strength. We may indeed readily grant, that all old Perſons are not plethoric, and, conſequently, do not ſtand in need of Veneſection; nor does Age of itſelf contribute to the Repletion of the Veſſels: But, at the ſame time, there are ſome vigorous, robuſt, and ſound old Perſons, furniſhed with capacious Veſſels, who not only eat heartily, *but are, alſo, capable of duly concocting and digeſting* the heavieſt Aliments; in conſequence of which, it is not to be doubted but a copious Chyle and Blood will be generated from well-concocted Aliments; and ſuch a State is ſufficiently apparent from the florid Colour of the Countenance, and the Turgeſcence of the Veſſels with Blood: It, alſo, frequently happens, that not only Adults, but, alſo, Perſons extremely old, diſcharge large Quantities of Blood from the hæmorrhoidal Veins, without any remarkable Loſs of Strength: And I myſelf have known ſome Perſons of eighty Years of Age, who have evacuated large Quantities of bloody Urine, without a perceptible Decreaſe of Strength. Beſides, Age is not very fit for Motion and Exerciſe; and, for this Reaſon, the Excretions cannot bear a due Proportion to the Quantity of Aliments taken; and, as the Blood is little conſumed by Heat and Motion, there muſt, neceſſarily, be produced a Redundance of Humours, and an Infarction and Plenitude of the Veſſels, which, unleſs ſeaſonably removed, lay a Foundation for thoſe Diſorders which are moſt familiar to old Perſons, ſuch as Waſting of the Fleſh, Coughs, Coryzas, Hoarſneſs, Pains of the Joints, Palſies, a Difficulty of Urine, Stones of the Kidneys and Bladder, Itchings, and the dry Itch: Which Diſorders do not proceed immediately from a Redundance of the Blood, but, rather, from an Impurity of the Serum; but, at the ſame time, this Impurity of the Serum derives its Origin from the Redundance of the Juices, by which the Excretion of the Sordes is prevented.

I know many Inſtances of old Perſons who have lived ſound, robuſt, and free from the ordinary Diſeaſes incident to Old-age, by no other means than Veneſection, uſed twice a Year. And that Veneſection is not unfriendly to Old-age, is ſufficiently obvious from this, that almoſt all the *Swiſs*, even when eighty or ninety Years of Age, uſe Veneſection every Year. See *Wepfer, Lib. de Apoplexia. Primroſe*, alſo, *Lib.* 4. *de Vul. Error. Cap.* 23. evinces from three Inſtances, that Perſons of eighty Years of Age may commodiouſly bear Veneſection in the moſt violent Diſtempers, whether ariſing from internal or external Cauſes: This I have, alſo, found confirmed by frequent Experience. But we are by no means from this to conclude, that Veneſection is proper in old Perſons, who are weak and languid, whoſe Appetite is loſt, or who labour under a Weakneſs of the Stomach and Inteſtines, and, eſpecially, in thoſe who have previouſly ſtruggled with ſome long and chronical Diſorder.

In continued and acute Fevers, Veneſection is generally not only uſeful, but abſolutely neceſſary: It is ſurpriſing, that ſome eminent Phyſicians, in other Caſes remarkable Patrons of Veneſection, ſhould yet maintain, that in all acute Fevers, whether of the benign or malignant Kind, as, alſo, in exanthematous Fevers, and thoſe that are not ſuch, it is ſo far from being neceſſary, that it is rather pernicious, except in the Synocha, in which they do not think it abſolutely neceſſary; but only when it is accompanied with a Plethora, and an Orgaſm: They aſſert, that it has been frequently obſerved, that Veneſection, in the Beginning of ſuch a Fever, has, about its State or Height, produced dangerous Tranſlations and Congeſtions of Blood to the Head, which induce Convulſions, and a mortal Phrenitis: They are, alſo, of Opinion, that Nature, which always wiſely governs the animal Oeconomy, does not in theſe Fevers intend an Evacuation of the redundant Blood; but only a Reſolution of it into an excrementitious Serum, with a Secretion of the noxious Matter, by means of an intenſe Heat; and that, for this Reaſon, Veneſection is, in theſe Caſes, contrary to the Intention of Nature, ſince, by it, the ſalutary Work of Secretion is diſturbed. But this Doctrine is overthrown, both by Reaſon and Experience: For I have known many robuſt Perſons, both young and full-grown, who, being full of Blood, and ſeized with theſe Fevers, in conſequence of the Omiſſion of Veneſection, have, in a few Days, died of a Phrenitis, an Inflammation of the Stomach or Fauces, or a Peripneumony. In ſuch Caſes, after Death, the whole

whole Body has been found ſurpriſingly tumid, and the ſanguineous Ichor has been copiouſly diſcharged from the Noſtrils: A prodigious Stench, alſo, accompanied with Putrefaction, has immediately ſucceeded; for no other Reaſon but the inflammatory Stagnation of the Blood. On the contrary, I have, from many Obſervations, found, that Veneſection, only once performed, in Patients labouring under acute Fevers, has not only diminiſhed, or abſolutely removed, the Anxieties of the Patients, but, alſo, a Train of other terrible Symptoms. This Doctrine is, alſo, confirmed by the Practice of the *French*, who, in all Fevers, with great Succeſs, uſe Veneſection, not only once, but twice, or oftener, if the Condition of the Patient indicates its Propriety: But that Veneſection, about critical Times, produces Tranſlations of Blood to the Head, is an egregious Miſtake; for though Phrenſies and Convulſions frequently happen, in thoſe who labour under acute Fevers, yet the ſame Misfortunes happen, and that too more frequently, when Veneſection is omitted, than when it is uſed: And ſince almoſt all who die of acute Fevers, are ſeized with a Phrenitis and Convulſions, certainly, if Veneſection is the Cauſe of theſe Symptoms, a Perſon labouring under an acute Fever, cannot readily die, if that Operation is neglected.

I, on the contrary, do not heſitate to affirm, that, in acute Fevers, Veneſection is often not only uſeful, but neceſſary; for Perſons ſeized with acute Diſorders have always rather a Redundance, than a Penury, of Blood and Humours: Now it is certain, that the very Eſſence of a Fever conſiſts in an Augmentation of the Tone, and a certain ſpaſmodic Stricture, of all the Veſſels and Fibres, upon which both the Circulation of the Blood, and the Increaſe of the Heat, depend: It is, alſo, known, that by Spaſms the Diameters of the Veſſels are leſſened; and that, by Heat, the Humours are expanded, and poſſeſs a larger Space: For which Reaſon the redundant and raging Blood, being denied a free Paſſage through the Blood-veſſels, is impetuouſly agitated hither and thither, and forced, as to improper Parts, thro' Veſſels whoſe Diameters are naturally too ſmall for the Admiſſion of the Blood, where it remains, becomes ſtagnant, and lays a Foundation for dangerous Inflammations, which are moſt effectually prevented by ſeaſonable Veneſection. This is ſufficiently confirmed by the Authorities of the moſt skilful Phyſicians; for *Hippocrates* himſelf, in his Treatiſe *de Ration. Vict. in Acut.* warmly recommends Veneſection, in acute Diſorders: Beſides, the Antients, in theſe dangerous Diſeaſes, uſed Veneſection till a Deliquium was brought on, as we are informed by *Galen*, in *Lib.* 1. *de Rat. Vict.* where he tells us, that ſuch Veneſection as brings on a Deliquium is only to be uſed in the moſt acute Diſeaſes, and in thoſe Patients who are robuſt and vigorous, in the Flower of their Age, and abound in Blood, as, alſo, where the Climate, the Air, and the Seaſon of the Year, are very temperate. The Diſeaſes of this Kind are highly burning Fevers, intenſe Pains, conſiderable Inflammations of the Viſcera, Carbuncles, a Synochus, an inflammatory Laſſitude, and violent Pains of the Joints: For, in all theſe Diſorders, when a large Quantity of Blood is evacuated, the Heat is immediately abated; in ſome of them the Body is render'd ſoluble, or Sweats are excited; by which means the Diſeaſe is either terminated, or at leaſt diminiſhed, according to *Hollerius*, in *Comment. ad Aphor.* 3. *Sect.* 1. *Hippocr.*

In Exanthematous Fevers, alſo, thoſe of the Petechial and Purple Kind, the Meaſles, and Small-pox, and even the Plague, Veneſection is ſo far from being unſafe, that, when prudently uſed, it próves highly beneficial. It is a Diſpute of great Importance among Phyſicians, whether in thoſe Diſorders, in which the peccant Matter is forced to the Surface of the Body, Veneſection may be properly and ſucceſsfully uſed: Some eſpouſe th Affirmative, and others the Negative, whilſt both appeal to Experience: But a due Diſtinction is to be made, and Veneſection is to be accommodated to the Nature and Variety of Circumſtances: Thus, for Inſtance, when the Humours are defective; when, in the Beginning of a Diſorder, the Strength is impaired; when the Pulſe is weak, hard, and ſmall, the Veſſels numerous, but narrow; when the Strength is diminiſhed by any Affliction of Mind, or by a Flux; in a Word, where-ever there is a Malignity of the Humours; Veneſection is rather prejudicial than ſalutary: For, in order to eliminate a Matter which offends, not ſo much by its Redundance, as by its cauſtic, ſubtile, and virulent Quality, ſo prejudicial to the nervous Parts, a ſtrong moving Force of the Heart and Arteries is required; which can only be expected from a ſufficient Influx of the Blood, and nervous Fluid. Beſides, this peccant Matter to be expelled can only be convey'd to the Surface of the Body, by the Aſſiſtance of the Blood and Humours; ſince, when the Diameters of the Veſſels are ſmall, they eaſily collapſe, and are only filled by a brisk and lively Impulſe of the Fluids: If, therefore, a Phyſician, by Veneſection, diminiſhes the already defective Blood, Humours, and Strength, he does a terrible Injury to the Patient; ſince, by this means, the peccant Matter remaining within, like a Poiſon, perverts the Motion of the Solids and Fluids, and proves mortal.

But quite different Meaſures are to be taken, when, in conſequence of the Redundance of the Blood, and its Rarefaction by the febrile Heat, the Coats of the Heart and Arteries are ſo diſtended, that their Syſtole is diminiſhed, and almoſt ſuppreſſed; in conſequence of which, the Blood is not freely convey'd to the ſmall cutaneous Tubes, that the peccant Matter may be duly ſecreted and eliminated; for, in ſuch a Caſe, Reaſon informs us, that, when a certain Quantity of the Blood is evacuated, the remaining Part circulates more briskly, the equable Reſiſtance of the Coats to the Impulſe of the Fluids, and the ſyſtaltic and diaſtaltic Motion, are reſtored, by which the Secretion and Evacuation of the peccant Matter is excellently carried on: This moſt frequently happens in young and phlethoric Perſons of ſanguineous Conſtitutions, who live high, or are accuſtomed to an indolent Courſe of Life; as, alſo, in thoſe Conſtitutions, in which an immoderate Indulgence of boundleſs Paſſion has diminiſhed the Excretions, and, conſequently, generated a Redundance of Humours. Patients of this kind, when labouring under a purple, petechial, a catarrhous, benign, or malignant Fever, or the Small-pox, are expoſed to the moſt certain and infallible Danger, by an Omiſſion of Veneſection; whilſt, on the contrary, thoſe Diſorders are happily removed, when, by diminiſhing the Phlethora, the free Circulation of the Blood is reſtored.

In Exanthematous Fevers already appearing on the Skin, Veneſection is ſo far from being prejudicial, that it is ſometimes highly beneficial. It is a common Opinion, that upon the Efflorescence of Petechial and Purple Fevers, the Meaſles, and Small-pox, it is neither proper to uſe Veneſection, nor Purgatives, leſt the malignant Matter, being by theſe means recalled into the Habit, ſhould produce an irreparable Loſs. But though it is an Obſervation of great Importance, and ſupported by Experience, that Veneſection is not to be uſed, when Nature is employ'd in the Work of Excretion, and when the exanthematous Eruptions have not had a long and fixed Seat in the Skin; yet there are Caſes, in which, after the Appearance of the Efflorescences, Veneſection is both uſeful and neceſſary: For I have obſerved, in thoſe who have died of a Purple Fever, whether of the primary or ſecondary Kind, or of the Meaſles, or Small-pox, violent Spaſms, not only of the Joints and Extremities, but, alſo, of the Abdomen, which, in conſequence of the Contraction of the Skin, were ſucceeded, not only with a Retroceſſion of the Efflorences, but, alſo, with a violent Anxiety, a Toſſing of the Body, and frequently a Delirium, accompanied with a Deliquium; all which mortal Symptoms are not, as is commonly believed, ſo much produced by the Retroceſſion of the exanthematous Matter to the internal Parts, as by the Impetus and Congeſtion of the Blood to the Heart and Brain: Hence, induced by the Reaſon of the Thing alone, in one Year's Time, I, by Veneſection in the Arm, ſaved four Childbed Women labouring under ſo violent Purple Fevers, that their Lives were deſpair'd of; for, as ſoon as a Vent was given to the Blood, the Anxiety about the Præcordia, and the Deliquiums, were removed, and the Patients forthwith became better, to the great Surprize of the Surgeon and Byſtanders, who predicted the Death of the Patients, under the very Operation which could only afford them Relief. In a young Man, alſo, dangerouſly ill of the Small-pox, when an imminent Delirium, and a violent Anxiety about the Præcordia, threaten'd Death, I ſucceſsfully order'd Veneſection in the Arm. Nor does this Piece of Practice want the Authority of ſome of the moſt celebrated Phyſicians to ſupport it: Thus *Botallus*, that noted Patron of Veneſection, in *Lib. de Venæſect.* informs us, that, with great Succeſs and Advantage, he order'd Veneſection in peſtilential Buboes, and other exanthematous Diſorders, if the Fever did not remit. *Muraltus*, alſo, not to mention others, in *M. N. C. Dec.* 2. *An.* 7. *Obſ.* 115. obſerves, that Veneſection proved ſalutary in an epidemical Fever, in which a large Number of Papulæ appeared on the Body.

In the Paroxyſms and Exacerbations of Fevers, and other Diſeaſes, Veneſection is dangerous; but is beneficially uſed on the intervening Days: In the Paroxyſms of intermittent Fevers, under an immediate Fit of an Epilepſy, or the hyſteric or hypochondriac Diſorders, and in Caſes where the Extremities are cold, or internal Heat and Anxieties rack the Patient, Veneſection not only augments the Violence of the Symptoms, but, alſo, endangers the Life of the Patient. The Reaſon of this is obvious; for the Exacerbation of Symptoms and Diſeaſes is accompanied with Spaſms, eſpecially of the external Parts, as, alſo, of the Stomach and Inteſtines; by which the free Circulation of the Blood is intercepted, and the Blood itſelf forced, with a greater Impetus, to the large Veſſels, and eſpecially to the Breaſt and Heart: If, therefore, any one attempts Veneſection in the Arms or Feet, when all the Parts are ſpaſmodically conſtricted, he will in theſe Parts infallibly augment the Spaſms; for the larger Quantity of Blood is taken from theſe Parts, the more the ſpaſmodic Contraction of the Fibres is increaſed; ſince nothing more powerfully reſiſts this ſpaſmodic Stricture, and the Regurgitation of the Blood to the internal Parts, than a ſtrong Impulſe of the Heart and Arteries, and a liberal Afflux of the reſiſting Blood to the Parts: Hence it is expedient to delay Veneſection till the Day of Intermiſſion or Remiſſion, when the Spaſms are remitted, and the free Afflux of the Blood to the Parts is reſtored.

But there are ſome Caſes, in which it is expedient, even under the ſpaſmodic Paroxyſms, though not in the Parts ſpaſmodically affected, but in thoſe to which the Blood is conveyed with the

greateſt Impetus: Thus it often happens, that, in conſequence of Spaſms of the Parts of the Abdomen, or of the Legs and Feet, which are extremely cold, either on account of a Fright, or any other Cauſe, the Blood is impetuouſly convey'd to the Breaſt and Head, and threatens an Apoplexy, or a Suffocation; in which Caſe, a Vein opened, not in the inferior, but ſuperior Parts, is highly uſeful, and affords preſent Relief.

There is, therefore, a ſlight Species of Apoplexy, which may be removed by Veneſection alone, when, either by the Violence of ſome Paſſion, eſpecially a Fright, or by terrible Spaſms of the inferior Parts, the Blood being with ſuch an Impetus convey'd to the Head, as, by its Quantity, to diſtend the Veſſels of the Membranes of the Brain, their ſyſtaltic Motion is checked, and a ſlight Species of Apoplexy produced. This Species of Apoplexy is very familiar to hyſteric Women, to Perſons of plethoric Habits, and thoſe of delicate Conſtitutions and Minds; and is, by the unskilful and unthinking Part of Mankind, taken for a Deliquium; from which, however, it is widely different; For, in a Deliquium, there is no Pulſation of the Heart and Arteries, the Face is pale, and the Breathing imperceptible; but, in this ſlight apoplectic Paroxyſm, the *Uſe of all the Senſes*, whether external or internal, is totally deſtroyed, the Limbs remain immoveable, there is a violent Palpitation of the Heart, the Pulſe is large and quick, and the Face tumid and red: Nor does this ſlight Apoplexy ariſe from a Rupture of the Veſſels, which is an incurable Diſorder; nor from a Secretion of the Serum, which terminates in a Palſy; but only from a Stagnation of Blood in the Cavities of the preternaturally diſtended Veſſels; for it is certain from anatomical Diſcoveries, that the carotid and vertebral Arteries, as ſoon as they enter the Cranium, and run through the Membranes of the Brain, lay aſide their thicker Coats, with which all their other Parts are covered: For which Reaſon it is not to be wonder'd at, if, by the Quantity and Impetus of the Blood convey'd to the Brain, their contractile and elaſtic Force, by the Aſſiſtance of which the Blood is farther protruded into the venous Sinuſes of the Head, is diminiſhed or deſtroyed; by which means the Syſtole of the Carotids being deſtroyed, the Blood ſtagnates in the too much diſtended Veſſels of the Membranes of the Brain, and in the Plexus Choroides: Hence the Secretion and Influx of the nervous Fluid, on which Senſation and Motion depend, are intercepted and deſtroyed: Hence it is obvious, that, in order to reſtore the due Syſtole of the Veſſels, the free Circulation of the Blood through the Head, and the Influx of the nervous Fluid into the Nerves, there can be no more proper and efficacious Remedy, than taking a ſufficient Quantity of Blood from a large Oriſice made in one of the Veins of the Arm; for, by this means, in a ſhort time, Reaſon, Senſation, and Motion, are reſtored.

But thoſe Phyſicians ill conſult the Safety of their Patients, who, for want of a ſufficient Knowledge of the Cauſes of this Misfortune, order Veneſection in the interior Parts, becauſe theſe are, in ſuch a Paroxyſm, generally ſpaſmodically conſtricted, cold, and too remote from the Part affected, by which Circumſtances the Derivation of the Blood is rendered leſs expeditious and commodious. Beſides, I have often obſerved, in Patients whoſe whole nervous Syſtems were diſpoſed to ſpaſmodic Contractions, and whole Extremities were always cold, that by Veneſection, even when ſcanty, the Violence of the Spaſms in the interior Parts has been in a few Hours increaſed: In conſequence of which, the Blood, being afterwards impetuouſly convey'd to the Brain, produces the apoplectic Fit above deſcribed, and which, in Proceſs of Time, becomes ſo violent, as to cut off the Patient, or, at leaſt, leave behind it a Palſy, or Loſs of Memory, unleſs removed by a ſpeedy and ſeaſonable Veneſection.

Diſorders of the Head ariſing from a Congeſtion of Blood, and a Diſtention of the Veſſels, require a Veneſection, which, however, is to be performed in the adjacent Parts. A violent and obſtinate Head-ach, a frequent Hæmorrhage from the Noſe, melancholic Madneſs, a Vertigo, an Ophthalmia, an Erysipelas of the Head, and Inflammations of the Larynx and Pharynx, very frequently draw their Origins from Spaſms, too great a Congeſtion of Blood to the ſuperior Parts, and a violent Diſtention of the Veſſels; eſpecially in hypochondriacal Patients, and in Caſes where the Stomach and Inteſtines are turgid with Flatulencies and Sordes, or are ſpaſmodically conſtricted; as, alſo, in Caſes where the free and equable Circulation of the Blood is ſo intercepted, that, ruſhing copiouſly and impetuouſly to other Parts, eſpecially the Head, it there produces theſe Diſorders. In ſuch Caſes, for preventing Danger, and deriving the Impetus of the Blood elſewhere, it is expedient to open a Vein, either in the Forehead, the Temples, under the Tongue, or in the Neck.

In violent Cephalalgias, Ophthalmias, and Quinſeys, Veneſection under the Tongue is always highly beneficial; but, in a Phrenitis, Melancholy, and an Head-ach, ariſing from internal Cauſes, it is moſt expedient to open the external Jugular Vein; and, if this cannot be found, the Vein which runs longitudinally along the Forehead, and is a Ramification of the external Jugular, is to be open'd; the Neck being previouſly tied with a Ligature under the Chin, and the Breath retain'd. The Opening of this frontal Vein was very common among the Antients. Thus *Hippocrates*, in *Sect.* 5. *Aph.* 68. informs us, "that a Pain in the poſterior Part "of the Head is relieved by opening the Vein running along the "Forehead." And *Hollerius*, in his Commentary on this Aphoriſm, tells us, "that 'tis certain from Experience, "that many "have been inſtantaneouſly freed from Head-achs, by opening "the ſame Vein." *Alexander Trallian*, in *Lib.* 1. *Cap.* 13. greatly recommends the opening of the frontal Vein in a Phrenitis; and affirms, that he ſuddenly cured a phrenitic Patient by that Means; and in the 16th Chapter of the ſame Book, *de Melancholia*, he has theſe Words: "If a ſanguineous Matter is im-"pacted in the Brain, we are boldly to open the frontal Vein; "for, in conſequence of the Evacuation of the whole other "Parts of the Body, there is no Harm produced by immediate "Applications to the Part affected."

Tho' we are certain from Experience, that in violent Diſorders of the Head, opening the frontal Vein, thoſe behind the Ears, the external Jugulars, and the ſublingual Vein, are of great Service, yet this Practice is not to be univerſally recommended; nor is it proper in all Caſes, ſince we are to have a particular Regard to the State and Conſtitution of the Patient; for if ſuch Diſorders of the Head are accompanied with a Plenitude of the Veſſels, or if violent Spaſms of the inferior Parts convey the Blood copiouſly and impetuouſly to the Head, it is to be dreaded, leſt opening a Vein in the Head ſhould invite a larger Quantity of Blood to it. For this Reaſon the moſt skilful of the Antients unanimouſly adviſe, that, at the ſame time, a Vein ſhould be open'd in the Arm, or in the Foot. Thus *Alexander Trallian*, in *Lib.* 1. *Cap.* 16. tells us, "that if we attempt any Cure on the Head, before the Body "is freed from its recrementitious Juices, we do Harm rather "than Good; ſince by that means a larger Quantity of Hu-"mours is attracted to the Part affected." *Hollerius*, alſo, in *Comment.* in *Aph.* 68. *Sect.* 5. of *Hippocrates*, informs us, "that, "if a Pain of the Head is accompanied with a Plethora, we "muſt firſt open a Vein in the Cubit, and then the frontal Vein; "but, if there is no Plethora, we may forthwith ſafely open the "frontal Vein; and if the Pain of the Head is produced by Con-"ſent, if, for Inſtance, it ariſes from a Suppreſſion of the Menſes, "we are firſt to open the Vein in the Ancle, then that of the "Cubit, and then the frontal Vein. If the Head-ach ariſes "from ſome Diſorder of the Diaphragm, or Liver, we are firſt "to open the cubital, and then the frontal Vein."

With reſpect to opening the ſublingual Veins, in an Angina, it is, alſo, to be obſerved, that in a plethoric Habit, this Practice is dangerous, unleſs the Plethora is previouſly removed, by opening a Vein in the Arm. We are, therefore, to follow the Directions of *Alexander Trallian*, who, in *Lib.* 4. *Cap.* 1. *de Angina*, uſes theſe Words: "In Caſes of Neceſſity, I have, in the Morning, "open'd the cubital Veins, and then the frontal; after which, "by exhibiting Cream of Ptiſan in the Evening, I have perfectly "cured a Quinſey. I have, alſo, with great Succeſs, open'd the "jugular, when I could not find the ſublingual Veins."

In Diſorders of the Breaſt, ſuch as a genuine Pleuriſy, and a Peripneumony, Veneſection in the Arm is often highly neceſſary. Tho' a ſpurious Pleuriſy, which is a Species of Rheumatiſm, or arthritic Pain, and which ariſes from an acrid Serum contain'd within the Pleura, and ſurrounding the Ribs, does not always require Veneſection, but is often happily remov'd by a Diaphoreſis; yet quite different Meaſures are to be taken, in a true Pleuriſy and Peripneumony, the former of which is only a ſlight, and the latter a more profound Inflammation of the Lungs, ariſing from a Stagnation of Blood, firmly impacted in their Veſſels; for, in theſe, Veneſection is not only neceſſary, but, if there is a Plethora, muſt be repeated, in order to prevent the Increaſe of the Inflammation; which End is obtained, when the Blood, which is too copiouſly congeſted in the Veſſels, ſtagnant, and incapable of a free Circulation, is, for the ſake of a better Derivation, drawn from the moſt contiguous Part, making a large Inciſion in the Vein, that thus the Blood may be the more quickly and impetuouſly deriv'd from the Lungs.

Veneſection is of ſingular Uſe for the Purpoſes of Evacuation, Revulſion, and Derivation: The evacuating Uſe of Veneſection is to diminiſh the Quantity of the Blood; and, when this Intention alone is purſued, it is of no Importance, from what Part of the Body the Blood is taken. The derivatory Uſe of Veneſection is to attract the Flux of the Blood from any Part affected to other Parts, from which it may be more commodiouſly evacuated. Thus, in violent ſpaſmodic and flatulent Diſorders of the Abdomen, and in Diſeaſes ariſing from a Suppreſſion, or retarded Diſcharge, of the Menſes or Hæmorrhoids, 'tis ſafer for the Purpoſes of Derivation to open a Vein in the Foot, rather than in the Arm. Hence *Hippocrates*, in *Lib. de Nat. Hum.* juſtly informs us, "that, in Pains "of the Back and Coxendices, we are to uſe Veneſection in the "Hams and Ancles." And *Severinus*, in his Treatiſe *de efficaci Medic. Cap.* 26. informs us, that, for preventing nephritic Pains, promoting the hæmorrhoidal and lochial Diſcharges, as, alſo, in Inflammations and Fallings down of the Anus, in Vomitings of Blood, and Schiatic Pains, a Vein is with great Succeſs opened in the Foot: On the contrary, in Diſorders of the Head, ſuch as an Apoplexy, a Lethargy, Madneſs, Melancholy, a Phrenitis,

a Phrenitis, a ſuffocative Catarrh, a ſanguineous Aſthma, a Spitting of Blood, a Pleuriſy, a Peripneumony, a ſpurious Inflammation of the Liver, the too great Quantity and Influx of the Blood, which ought ſpeedily to be deriv'd to other Parts, are more happily remov'd by opening a Vein in the Arm, which is far nearer the Part affected: But Revulſion, or rather Avulſion, is made, when the Impetus of the Blood is recal'd, or, as it were, drawn upwards, from the inferior to the ſuperior Parts. Thus, in too profuſe a Diſcharge of the Menſes or Hæmorrhoids, a Vein is ſucceſsfully open'd in the Arm. The ſame Practice is, alſo, expedient in pregnant Women, in order to prevent Abortion, if the Veſſels of the Uterus are ſo much infarcted and diſtended with Blood, that the Weight of the Uterus, preſſing downwards, becomes burdenſome and uneaſy to the inferior Parts.

Veneſection is to be prudently us'd for the Purpoſes of Derivation and Revulſion; for, if Obſtructions of the Veſſels ariſing from impacted Blood are to be remov'd, it is expedient not to take a large, but a moderate Quantity from the moſt contiguous Part; becauſe, by this means, the Remainder of the Blood is more impetuouſly convey'd to the Part affected, and carries off the ſtagnant Blood lodg'd in the ſmall Veſſels, ſince moderate Veneſection accelerates the too languid Motion of the Fluids in the Veſſels. Hence, opening the Vena Saphena often inſtantaneouſly reſtores the menſtrual Diſcharge; and the hæmorrhoidal Diſcharge, when too ſlow, is happily promoted and accelerated by opening a Vein in the Foot; whereas theſe Effects are often not produc'd, by taking a large Quantity of Blood from the Arm, or the Foot; but, if the Diſorder is inveterate, and the Obſtructions of the Veſſels ſo great, that it cannot be remov'd, in ſuch a Caſe, if the Patient is plethoric, opening of the Vena Saphena is more hurtful than beneficial; becauſe it invites the Blood more copiouſly to the Uterus, by which means a greater Obſtruction of the Veſſels is produc'd. Nor in an Hemicrania, or obſtinate Head-ach, in a chronical Vertigo, or in Melancholy, does Veneſection in the frontal Vein afford any Relief; becauſe by that means a greater Afflux of Blood to the Head is produc'd, and the obſtructed Veſſels of the Membranes of the Brain more infarcted. 'Tis, therefore, better, in ſuch Caſes, to take Blood from the inferior Parts: In recent Iſchiadic Pains, Veneſection in the Foot often affords immediate Relief; whereas, when the Diſorder is inveterate, it rather increaſes it. In Bodies, therefore, full of Blood and Juices, 'tis far more ſafe, according to the Advice of *Hollerius*, in *Comment.* in *Sect.* 4. *Aphor.* 36. firſt to open a Vein in the Arm, and then the Schiatic Vein, that there thus may be a Revulſion of the Blood in various Places, at one and the ſame time. The ſame Author, alſo, juſtly informs us, that in Dyſuries proceeding from Infarctions of the Kidneys with Blood, as, alſo, in Inflammations of the Bladder, we are firſt to open a Vein in the Arm, and then the Vena Saphena, in the Ham or Ancle. From what has been ſaid, 'tis ſufficiently obvious, that Veneſection may be us'd in a Part very contiguous to that affected, if the Diſeaſe is recent, its Cauſe moveable, and the Plenitude of the Veſſels not very great; but when the Diſeaſe is of a long Standing, and the Body abounds with too much Blood, we are firſt to uſe Veneſection in the more remote, and then in the more contiguous Parts of the Body.

It is of great Importance to take away only a due and proper Quantity of Blood; and ſometimes there is a neceſſity for reiterated Veneſection. Young Perſons, thoſe of tender Habits, ſuch as have ſmall Veſſels, and Women who readily fall into *Deliquiums* by means of large and copious Veneſection, ought to abſtain from it, if poſſible; but, if it ſhould be abſolutely neceſſary, the Orifice ſhould in ſuch Perſons be made ſmall, and the Blood but gradually evacuated, compreſſing the Inciſion at proper Intervals with the Finger. But Women, after fifty Years of Age, when their Menſes generally ceaſe, require a larger Extraction of Blood, which, alſo, holds in robuſt Men with large Veſſels, and in Perſons, who, being accuſtom'd to rich and delicate Living, begin to have the hæmorrhoidal Diſcharge ceaſe. In the Spring, eſpecially in *May*, People can bear larger Evacuations of Blood, than in the Summer, or Autumn; but a moderate Quantity of Blood is only to be taken away in exceſſive Hæmorrhages, ſuch as ſpitting of Blood; as, alſo, enormous Diſcharges of the Menſes, and Hæmorrhoids: Nor is it expedient to deprive the Body of a large Quantity of Blood, before the ordinary Time of the Menſes, leſt the ſubſequent Diſcharge ſhould either totally ceaſe, or be conſiderably diminiſhed.

In all inflammatory and exanthematous Fevers, if, in conſequence of a Plethora, there is a Neceſſity for Veneſection, we are to be very careful, that only a due Quantity of Blood be taken away; for, if, in caſe of a Redundance of Blood, too ſmall a Quantity of it, ſuch as an Ounce or two, is taken away, the orgaſtic Expanſion of the Blood is often augmented; ſo that it is ſo far from being beneficial, that it rather does Injury by increaſing the Inflammation, and preventing the Eruption of the exanthematous Matter. In like manner, if too large a Quantity of Blood is taken away, more Harm than Good is done, ſince by this means the Expulſion of the exanthematous Matter, which ought to be conveyed to the Skin by the Blood, is hinder'd, and the peccant matter, to the great Detriment of the Patient, retain'd in the Habit. In a Peripneumony and Pleuriſy, too copious Veneſection hinders the Expectoration and Diſcuſſion of the inflammatory Matter, which ought, alſo, to be evacuated, and carried off, by means of the Blood. In Rheumatiſms, an Eryſipelas, and arthritic Pains, both of the fix'd and wandering Kind, it is, alſo, neceſſary to leave a Quantity of Blood ſufficient for the Cure of theſe Diſorders; that is, we are neither to take away too large, nor too ſmall a Quantity.

If a Plethora not only oppreſſes the Veſſels, but, alſo, impairs the Strength, a large Quantity of Blood, ſuch as a Medical Pound, for Inſtance, is to be taken away; for, if only a ſmall and inconſiderable Portion is evacuated, the Blood finding a greater Space, its Elaſticity is more increas'd, it becomes more expanded, and often acts with a greater Impetus on the Part affected. I have known Inſtances, ſays *Hoffman*, where, in conſiderable Plethoras, the Extraction of a ſmall Quantity of Blood, an Ounce or two, for Inſtance, has a few Hours after been ſucceeded by an apoplectic Fit, which has been happily remov'd by liberal Veneſection in the Arm, from which eight Ounces, for Inſtance, have been taken. I, alſo, remember, ſays he, that, in a certain plethoric Perſon, violent Anxieties of the Præcordia were produc'd by a Suppreſſion of the hæmorrhoidal Diſcharge, ariſing from Cold. Upon opening a Vein in his Foot, and taking away only four Ounces of Blood, all the Symptoms were augmented, ſuch as the Anxiety of the Præcordia, the Watchings, the Inquietudes, and Difficulties of Breathing, which, however, forthwith ceas'd upon taking ſeven Ounces of Blood from his other Foot.

Rheumatiſms, Catarrhs, Coryzas, and Coughs, are often generated by a prepoſterous and unskilful Veneſection, which, however, when ſeaſonably us'd, proves an excellent Means for preventing and removing theſe Diſorders. I have frequently obſerv'd, ſays *Hoffman*, in the Courſe of my Practice, that a few Days after Veneſection, eſpecially in the Spring and Autumn, when the Weather is not calm and ſerene, many have fallen into violent Catarrhs, Coryzas, Coughs, rheumatic Diſorders, and catarrhal Fevers; and this happens very frequently, eſpecially when Perſons, not ſufficiently clothed, expoſe themſelves to the cold and moiſt Air, particularly in the Evenings; for it almoſt always happens, that the Perſpiration is diminiſh'd by a pretty copious Veneſection, in conſequence of which, the Humours uſually carried off thro' the Pores of the Skin, in the Form of Vapours, are, in ſome meaſure, retain'd in the internal Parts; and this happens moſt frequently in Perſons of ſpongious Habits, and ſmall Veſſels. Nor is this Phenomenon hard to be accounted for: When a large Quantity of Blood is taken away, the Veſſels, eſpecially ſuch as are ſmall and near the Extremities, being before diſtended with Blood, begin to be flaccid and empty. And as there is an exquiſite and highly ſenſible Tone in the ſubcutaneous Integuments, hence it happens, that, on the Acceſs of a cold Air, the elaſtic Fibres of the Skin are contracted, and the ſudoriferous Ducts by that means block'd up; in conſequence of which, recrementitious Sweat not only remains in the Habit, but, alſo, is forced from the external to the internal Parts, eſpecially to the glandulous Parts of the Fauces and Bronchia, or to the mucilaginous Glands of the Joints, or to their glandular Ligaments, where an highly acrid, ſaline, and ſtagnant Serum, exciting violent Irritations and Conſtrictions of the Veſſels, hinders the free Circulation of the Humours; by which means, Secretions of Serum, Pains, intenſe Heats, and a copious Afflux of Humours, are excited.

But as an unskilful, or too copious, Veneſection lays a Foundation for Catarrhs, ſo it is frequently obſerved in Practice, that Veneſection prudently us'd in the Spring and Autumn, and repeated every Year, has freed many of Coryzas, Stuffings of the Head, and annual Coughs, and eſpecially, thoſe who before abounded in Blood, and have never had a Vein opened before. In the Spring, in conſequence of the Rarefaction and Expanſion of the Air, the Veſſels are turgid, on account of the Expanſion of the Blood, by the Acceſs of a ſubtile Ether: If therefore, an Evacuation of Blood, either natural or artificial, is not made, Stagnations of Blood, and Humours, and Secretions, and Depoſitions of Serum, readily happen in the moſt lax, ſoft, and glandular Parts: all which Misfortunes may be happily prevented by ſeaſonable and prudent Veneſection.

As the flatulent Colic is ſometimes augmented by Veneſection, ſo thoſe of the convulſive and hæmorrhoidal Kind are often alleviated, and totally remov'd, by it. Thoſe Flatulencies which violently diſtend the Inteſtines, moſt frequently depend upon a want of due Tone in them, or a Weakneſs of their periſtaltic Motion; for ſince, by the Force of this Motion, not only the Flatulencies, but, alſo, the other Contents, of the Inteſtines are carried downwards, ſo when it is either diminiſh'd, or totally deſtroy'd, Flatulencies are copiouſly generated, and become ſtagnant, eſpecially in the Flexures of the Colon about the Hypochondria; but this want of Tone in the Inteſtines principally ariſes from the Defect of a laudable Blood, and ner-

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vous Fluid; for which Reaſon old Perſons, People after Recovery from a Diſeaſe, thoſe weaken'd by any long-protracted Diſorder, or Indiſpoſition of Mind, thoſe abounding in Phlegm, or who feed upon very refrigerating Aliments, are frequently ſubject to a particular Species of Colic, which is happily cur'd, not by Veneſection, or diminiſhing the Quantity of Blood, but by carminative Medicines, poſſeſs'd of a balſamic and aromatic Principle. But other Meaſures are to be taken with the ſpaſmodic or convulſive Colic, which ariſes from Blood lodg'd in the inteſtinal Coats, and violently diſtending them; for ſeaſonably opening a Vein in the Foot not only proves a Preſervative againſt this terrible Misfortune, but, alſo, affords preſent Relief under it, as *Riverius*, in *Cent.* 1. *Obſ.* 44. has juſtly obſerv'd.

Both before and after Veneſection, ſome Cautions are to be obſerv'd as uſeful: For,

1. We are not, except in Caſes of urgent Neceſſity, to open a Vein in the Equinox or Solſtice themſelves, at full or new Moon, or in a rainy and gloomy Day. But 'tis expedient, a few Days before theſe Seaſons, and on a clear and ſerene Day, to uſe Veneſection as a Preſervative; becauſe about theſe Seaſons the Diſcharge of the Menſes generally happens, and various Diſorders of the ſpaſmodic Kind, epileptic Paroxyſms, and the Diſeaſes familiar to hypochondriac and melancholic Patients, generally return; and before the Paroxyſms or theſe Diſeaſes it is expedient, by Veneſection, to free the Body from its ſuperfluous and redundant Blood.

2. It is always expedient, in Perſons who readily faint, to conſtitute Veneſections, not with an empty Stomach, but after taking a little Broth, making the Orifice at the ſame time but ſmall.

3. After Veneſection, it is highly improper to load the Stomach with Meat or Drink; and much more, to drink to Exceſs, or expoſe the Body to a cold or moiſt Air; for 'tis certain, from frequent Experience, that by theſe means many, eſpecially in the Months of *March* and *October*, and particularly if they are of a ſpongious Habit of Body, fall into Coryzas, Coughs, Rheumatiſms, catarrhous Fevers, and ſpurious Pleuriſies; for by Veneſection, eſpecially when copious, the Perſpiration is conſiderably diminiſh'd, becauſe the exhauſted Blood no longer keeps the ſubcutaneous and ſudoriferous Ducts ſo open as they were before. Hence the cold Air, by cloſing them up, and repelling the Humours from the Surface of the Body to the interior Parts, produces the now-mention'd Diſorders.

4. Before Veneſection, it contributes to Health to free the Primæ Viæ and Stomach from Crudities and Sordes, not by a draſtic Purgative, but by a gentle Laxative; for we are by no means to exhibit ſtrong Purgatives to plethoric Perſons, becauſe, by exciting Spaſms of the Inteſtines, they by that means diſturb the free Circulation of the Blood, and produce prejudicial Congeſtions in various Parts of the Body.

5. In Women, on account of the menſtrual Diſcharge, and in Men ſubject to the Hæmorrhoids, it is always expedient to open a Vein in the Foot, leſt the Blood ſhould be derived from theſe Emunctories. But Men free from the Hæmorrhoids ought not to accuſtom themſelves to Veneſection in the Foot; for I have by that means ſeen blind Hæmorrhoids, without any Diſcharge excited, for removing of which Veneſection in the Arm ought to be inſtituted.

6. After Veneſection, a careful Regimen is to be obſerv'd; nor muſt the Patient forthwith return to his former Diet, and Method of Life. Hence we cannot forbear condemning the Cuſtom of the *Germans*, who never eat and drink more plentifully than after Veneſection.

Cupping with Scarification is often us'd as a Succedaneum for Veneſection. Thus *Celſus*, in *Lib.* 2. *Cap.* 10. informs us, "That the principal Uſe of Cupping-glaſſes is when any Fault "is lodg'd, not in the Whole, but in ſome particular Part, of "the Body, to which, for the Purpoſes of Health, they need "only be applied: And this is a Proof, that, in order to relieve "any Part, we are, with the Knife or Lancet, principally to "take Blood from the Part affected, ſince no one applies Cup"ping-glaſſes to a diſtant Part, unleſs when he intends to derive "the Blood from it, but to the Part affected, and which is to "be reliev'd." For this Reaſon, in Rheumatiſms, eſpecially ſuch as affect the Back, Scapulæ, and Arms, and in Pains of the Gout, a profound Scarification is with great Advantage made; as, alſo, in Parts affected with a preſſory and conſtrictory Pain; but it is obſervable, that a ſmaller Quantity of Blood is always obtain'd from the injured, than from a ſound Part. In order to prevent Gout-pains, ſome, every Month, with great Succeſs, uſe Scarification, either on the Sole, or on the upper Part, of the Foot. In Efflorescences, and Defedations of the Face, Cupping with Scarification is, alſo, uſeful, in order to derive the Blood from that Part. In fat and ſpongious Habits, this Practice is, alſo, uſeful, for removing Itches, and cutaneous Deformities.

In acute Diſorders, where the Strength does not admit of a quick and ſpeedy Evacuation of Blood by Veneſection; it is expedient, gently, and by degrees, to procure this Evacuation, if neceſſary, by Cupping, with Scarification. Thus *Celſus*, in *Lib.* 2. *Cap.* 11. informs us, "That Cupping, with Scarification, is to be "uſed in ſome acute Diſorders, when the Body is to be relieved, "and the Strength does not admit of an Evacuation of Blood "from the Veins. And this Practice is not only leſs violent, but "more ſafe, and never dangerous, tho' uſed when the Fever is at "its Height, and when the Crudities abound. For this Reaſon, "when immediate Danger attends the opening of a Vein, or "when the Diſorder is lodged in ſome of the more noble Parts "of the Body, we ought rather to have recourſe to Cupping, "with Scarification, eſpecially when we know, that it is a ſafe "and gentle Method, and that violent Diſorders muſt only be "cured by violent Remedies." I have found this Caution of *Celſus* to be founded on Experience; for I have obſerved, that Diſorders of the Head, ſuch as Epilepſies, Vertigoes, Madneſs, and Convulſions of the Joints, have been increaſed, and their Paroxyſms rendered more frequent, eſpecially in young Perſons, and thoſe of delicate Conſtitutions, by a quick and pretty copious Evacuation of Blood from a Vein; whereas they were very able to bear the Extraction of Blood by Cupping-glaſſes, which greatly alleviated their Diſorders. *The Reaſon of this* ſeems to be, that, in the Parts affected, the Violence of the Spaſms, to which the Blood in the Veſſels greatly reſiſts, is increaſed, if that Blood is ſuddenly taken from them. In acute Fevers, when, in conſequence of a Congeſtion of Blood in the Head, a Phrenitis is to be dreaded, it is, alſo, more ſafe and expedient to leſſen the Quantity of Blood, by applying Cupping-glaſſes to the Occiput, than by opening a Vein in the Cubit. *Proſper Alpinus*, in his Treatiſe *de Medicin. Ægypt.* informs us, that it was a common Practice among the antient Phyſicians of that Nation, in all acute Fevers, where, from a Redneſs of the Face, and continual Watchings, they dreaded a Phrenitis, to ſcarify the internal Veins of the Noſtrils, and, by tepid Baths of ſweet Water, procure an Evacuation of Blood from them. But when, in any Diſorder, inſtantaneous Relief is neceſſary, and a ſpeedy Derivation of the Blood from the Part affected, in an apoplectic Fit, for Inſtance, a Peripneumony, an Inflammation of the Uterus, or a cardiac Syncope, proceeding from an Infarction of the Blood in the Heart, or in Caſes where there is Danger of a Suffocation, Cupping-glaſſes are but of little Service; for 'tis rather expedient to make quick and ſpeedy Evacuation of Blood, by making a large Orifice in ſome proper Vein near the Part affected.

Cupping-glaſſes are to be uſed, when, in conſequence of Blood or Serum, ſtagnating in ſome external Part, Pains, Tumors, Inflammations, or other Diſorders, are produced. This Doctrine is confirmed by *Celſus*, in the former of the Paſſages before-quoted from him; for the Uſe of Scarification is either evacuatory or derivatory; the former, in order to diminiſh the Plethora; and the latter, in order to extract the corrupted and impacted Matter. Many of the Antients, and eſpecially among the *Egyptians*, denied, that Cupping was of any Service in order to remove a Plethora; and, for that Reaſon only, applied Cupping-glaſſes to certain Parts. But when theſe are applied to any Part of the Body, ſuch as the Back, Arms, Thighs, or Legs, and the Inciſions made frequent and deep, twelve Ounces of Blood are often evacuated, of the ſame Weight and Conſiſtence with that which is taken from the Veins; for I have often convinced myſelf of this, by drying the Blood extracted by Cupping-glaſſes, and found three Parts fluid to one of the ſolid, as in the Blood taken from the Veins; ſo that it may juſtly be claſs'd among the vulgar Errors of Medicine, to affirm, that the Blood, extracted by Cupping-glaſſes, is thinner than that obtained from the Veins. However, in order to evacuate and divert the peccant Matter, Cupping is preferable to Veneſection; for I remember ſome Inſtances, where, in violent Pains of the Scapulæ, Pains and acrid Defluxions of the Eyes, a Gutta Roſacea, eryſipelatous Swellings of the Head, Veneſection in the Feet or Arms, was of no manner of Service; but Scarification in the Neck, Occiput, and behind the Ears, and the Application of Cupping-glaſſes to the Back, afforded great Relief. *Proſper Alpinus*, in his Treatiſe *de Medicin. Egyptior.* informs us, that in Pains and Defluxions of the Head and Eyes, Ophthalmias, Lippitudes, and in order to procure Sleep, the *Egyptians* applied Cupping-glaſſes to the Occiput, Neck, and behind the Ears, and, by profound Scarifications, extracted the Blood, but firſt ordered a Vein in the Arm to be opened. This Advice is carefully to be followed in plethoric Patients, even where the Veins of the Face or Noſtrils are to be ſcarified in violent Pains of the Head, or Madneſs, leſt Space being afforded, a greater Afflux of Blood to theſe Parts ſhould be excited. In order to prevent Gout-pains, Scarification made in the Soles of the Feet, every Month, is of great Service. And *Cardan.* in *Lib. de Art. Parv.* recommends Scarification under the very Paroxyſm of the Gout. And *Platerus*, *Lib.* 2. *Prax. Med.* confirms this Doctrine, by giving us ſome Inſtances of Perſons cured by this means. Beſides, *Severinus*, in his Book *de Efficac. Medic. Lib.* 1. greatly recommends the Uſe of Scarification, in order to prevent the ſpreading of a Sphacelus, and cure malignant Ulcers. *Galen*, alſo, in his Treatiſe *de Sang. Miſſion.* greatly recommends Scarifications of the Legs in Suppreſſions of the Menſes and Hæmorrhoids, which may be, alſo, uſed in thoſe who have an Averſion

ſion to Veneſection; who, from a languid Strength of the Heart, are ſubject to Faintings; or thoſe who, on account of the Tenderneſs of their Age, cannot bear a ſudden Extraction of Blood from an opened Vein.

Blood may be, alſo, extracted from the Body by Leeches, which are greatly commended by ſome Phyſicians. Tho' this Method ſeems to have been little known to the moſt antient Phyſicians; yet *Pliny*, in *Hiſt. Nat. Lib.* 32. *Cap.* 10. ſpeaks of them thus: "The Uſes of Leeches for extracting Blood are various, and "the ſame with thoſe of Cupping-glaſſes, which are to relieve "the Body, when oppreſſed with a Redundance of Blood, and "to open the Pores." Among the *Arabians*, *Rhaſes* knew the Uſe of Leeches; and, among the Phyſicians of the laſt Age, *Zacutus Luſitanus*, *Amatus Luſitanus*, and *Mercatus*, greatly commend the Application of them, eſpecially in thoſe Diſorders which are generally incident to the Head, ſuch as the Gutta Roſacea, Puſtules of the Face, and Head-achs, eſpecially of the rheumatic Kind; as, alſo, in Vertigoes, Melancholy, Quinſeys, and Tooth-achs, in which theſe Phyſicians applied them to the Occiput, Neck, and behind the Ears. Tho' I do not at all doubt of the Salubrity of the Evacuation of Blood made by Leeches, yet I have good Reaſon to ſuſpect, that no greater Advantage is to be obtain'd from them, than from the Evacuation procured by Cupping with Scarification.

The Application of Leeches to the Anus in a Suppreſſion of the Hæmorrhoids, and Diſorders ariſing thence, is generally greatly recommended. This Method of extracting Blood from the Veins of the Anus, by the Application of Leeches, is, by ſome, preferred to others, in Diſorders ariſing from a Suppreſſion of the Hæmorrhoids; ſuch as hyſteric Symptoms, and in thoſe Diſorders which, according to *Hippocrates*, are terminated by the hæmorrhoidal Diſcharge, ſuch as phrenitic, melancholic, hypochondriac, nephritic, and iſchiadic Diſorders; becauſe theſe Diſeaſes ariſe from Blood ſtagnating in the Veſſels of the Inteſtines, which terminate in the hæmorrhoidal Veins; in conſequence of which, this Blood is more eaſily evacuated, and the Part affected reliev'd, by applying Leeches to the Veins of the Anus, than if Blood was extracted from any other Parts of the Body. I cannot deny, but, in theſe Diſorders, Leeches may be of ſome Uſe, eſpecially if we may believe the Obſervations of *Zacutus Luſitanus*, *Amatus Luſitanus*, and *Mercatus*. But, whether an happier Effect may be produced from them, than from opening a Vein in the Foot, or from profound Scarifications in the Legs, I cannot aſſert, ſince I have not Experience to authorize me: For, in violent and inveterate Spaſms of the Hypochondria, I have often ſeen Leeches applied without any Effect; I have, on other Occaſions, ſeen them afford Relief for a time; and, by their Application to blind Hæmorrhoids, I have ſeen malignant Ulcers and Fiſtulas produced. Beſides, there is Reaſon to doubt, whether Leeches draw the Blood from the Part affected, becauſe they ſuck it from the external hæmorrhoidal Veins, the internal being concealed. Now the internal hæmorrhoidal Veins have little or no Communication with the inteſtinal Veſſels, the meſaraic Veins, and the Ramifications of the Vena Portæ, in which, however, the Seat of ſpaſmodic and hypochondriac Diſorders is placed. But, in an hæmorrhoidal Diſcharge, the internal hæmorrhoidal Veins evacuate the Blood; for which Reaſon, if the Hæmorrhoids flow duly, and at proper Times, they afford great Relief in the Diſorders ariſing from a Stagnation of Blood in the Ramifications of the Vena Portæ. *Hoffman.*

Phlebotomy, uſed in ſuch a Degree as not to impair the Strength, produces the following Effects.

1. It diminiſhes the Redundance of the arterial and venous Humours.

2. For this Reaſon it renders the Reſiſtance of the Fluids to be moved leſs.

3. In conſequence of this, it leſſens not only the Plenitude of the Veſſels, but, alſo, their mutual Compreſſion on each other.

4. Hence it reſtores a due Degree of Contraction, or Elaſticity, to the preternaturally diſtended Veſſels.

5. It rarefies the Fluids.

6. It attenuates the Humours.

7. It reſolves the Juices.

8. It removes Obſtructions.

9. It promotes the Circulation of the Blood, together with the ſeveral Secretions and Excretions ſo neceſſary to Life and Health.

10. It produces a Revulſion.

11. It refrigerates and cools.

Hence it removes many Diſorders of very different Natures, and induces ſurpriſing Changes on the State and Condition of the human Body.

Phlebotomy is indicated as expedient,

1. By a Redundance, or exceſſive Quantity, of Blood.

2. By too powerful a Reſiſtance made to the Action of the Heart by the Humours.

3. By a ſuffocated Motion of the Heart, in conſequence of too tumid a State of the Arteries, ariſing from a Redundance or Rarefaction of their Contents.

4. By the Motion of the Heart beginning to be ſuffocated, in conſequence of a preternatural Extenſion of the Veſſels, by which their Elaſticity is deſtroy'd.

5. By too great a Condenſation of the Blood.

6. By too great a Concretion of the Parts of the Blood.

7. By too great an Inſpiſſation of the Blood.

8. By the Signs of a violent and inflammatory Obſtruction found every-where in the Body; the moſt conſiderable of which are Pain, Tumor, Redneſs, intenſe Heat, and Anxiety, accompanied with a Suppreſſion of the Sweat, Spit, and Urine.

9. By too accelerated a Motion of the Humours through the Veſſels; or, alſo, a too ſlow and languid Circulation of the Humours, ariſing from a Redundance of the Humours; a Plenitude, and preternatural Diſtention, of the Veſſels; a Rarefaction, Attenuation, or Reſolution, of the Humours; and Obſtructions of the Veſſels.

10. By too intenſe an Heat in all the Veſſels.

11. By too violent an Impetus of the Blood forced into one particular Part, as in Hæmorrhages and Defluxions.

12. By epidemic Diſorders, whoſe Natures are underſtood.

13. By the Age, the Sex, the Method of Life, and the Conſtitution, of the Patient.

14. By a Cacochymy: And,

15. *Phlebotomy is indicated, when the Intention is to make* Medicines enter the Veſſels, to procure their due Mixture with the Fluids, and to augment their Efficacy in performing Cures of great Importance.

Phlebotomy is beſt and moſt advantageouſly performed,

1. By making a large Orifice with ſome cutting Inſtrument.

2. In a Vein that is diſengaged, large, eaſily diſcovered, and remote from Arteries, Nerves, and Tendons.

3. By accelerating the Velocity of the Blood, whilſt it flows, by means of a ſtrong Reſpiration.

4. By the Motion of the Muſcles contiguous to the opened Vein. And,

5. 'Tis moſt proper to perform Phlebotomy on Patients, whilſt they lie in Bed.

That Phlebotomy may be the more happily and ſucceſsfully performed, the Patient may be prepared for it,

1. By Frictions. And,

2. By Fomentations.

Phlebotomy is contra-indicated, and rendered improper,

1. By many chronical Diſorders, in which there are many Obſtructions, and only a very ſmall Quantity of fluid Blood remaining in the Veſſels.

2. By Old-age.

3. By particular Temperaments, or Habits, of Body.

4. By the known Nature of any epidemic or endemic Diſorder.

5. By a Criſis already made in another manner.

6. By the Deficience of red Blood, and the conſequent Weakneſs of the Patient. And,

7. By recent Childbirth.

Hence 'tis obvious, that an irreparable Injury muſt be done to Mankind, by uſing Phlebotomy in all Caſes, according to the Advice of *Leonhartus Botallus*; and by baniſhing it entirely from the Practice of Medicine, according to *Johannes Baptiſta Van Helmont.*

The Extraction or Evacuation of Blood from the hæmorrhoidal Veins is indicated,

1. By an atrabilarious Habit of Body.

2. By Diſeaſes accompanied with irregular and diſorderly Workings of the Fancy.

3. By a Suppreſſion of the uſual Diſcharge of Blood from theſe Veins.

4. By an Eruption of Blood from other Parts, which was before more happily evacuated from the hæmorrhoidal Veins.

Blood is evacuated from the hæmorrhoidal Veins,

1. By ſoftening theſe Veſſels by an emollient and warm Fomentation prepared of Water, Oil, Honey, and other emollient Ingredients; and applied by way of Clyſter, Vapour, or Fomentation.

2. By opening theſe Veſſels by Friction, with rough Subſtances, or by means of Leeches. And,

3. By the Uſe of Preparations of Aloes.

Scarifications act by ſtimulating, and by evacuating. Hence we are enabled thoroughly to underſtand the Action of Leeches.

But Setons and Fontanels ſtimulate with leſs Pain, agitate the nervous Syſtem, evacuate Serum, and procure a Vent, or Diſcharge, for preternatural Repletion.

Hence we may learn in what Parts, and on what Occaſions, theſe are indicated.

Stimulating Medicines, or ſuch as create Pain, Heat, and Redneſs, act by procuring Motion to the Nerves, and by determining Blood to particular deſigned Parts.

Hence they undoubtedly perform an unconceiveable Number of happy Effects, by the known Neceſſity of which they are, alſo, indicated.

Stimulating Medicines are generally reduced,

1. To highly adheſive, and, at the ſame time penetrating Dropaxes, applied warm in the Form of a Plaiſter, and torn off, repeating

peating this, till the Part affected becomes red, tumid, and hot. The Ingredients proper for these Dropaxes are, Pitch, Oil, Bitumen, the Ashes of Twigs of Vines, Galbanum, Pepper, Pellitory of *Spain*, Sal Gemmæ, and Sal Ammoniac.

2. To gentle Sinapisms, called *Phœnigmi*, applied by way of Cataplasm, and left till Redness, Heat, Itching, and Tumor, appear in the Part. The Materials for these are Mustard, Bryony, Garlick, Onions, Water-cresses, Squills, Euphorbium, Crow-foot, and the deadly Carrot.

3. To Vesicatories, which are only stronger Sinapisms used in the same Form, but producing more violent Effects. The Diversity only consists in the augmented Quantity of the acrid Substances. Thus, for Instance, three Parts of Figs, mixed with one Part of acrid Substances, yield a Phœnigmus; one Part of Figs, mixed with one Part of acrid Substances, yields a Vesicatory; and one Part of Figs, mixed with three Parts of acrid Substances, yields a strong Vesicatory.

4. To the potential Caustic, applied either in the Form of a Poultice, or with Lint. The Materials for this are Crow-foot, the Esula, the Tithymalus, fixed alcaline Salt, alcaline volatile Spirits, and Salts. The Effects produced by this Species of Remedy are Inflammation, and an Eschar. And,

5. To the actual Cautery, which is ignited Iron. *Boerh. Inst.*

Phlebotomy, or Bleeding by the Veins, is performed by making an Incision in a Vein, with a fine sharp-pointed Instrument, or Lancet, by which as much Blood is taken away, as may be proper for restoring or preserving the Health of the Patient.

This Operation may not improperly be called Venesection, and is not only extremely beneficial, but of a very antient Date, having been commended and practised about three thousand Years, as we learn from the Writings of *Hippocrates*, *Celsus*, and other antient Authors upon Surgery. Yet some Physicians, both antient and modern, such as *Erasistratus*, *Paracelsus*, *Helmont*, *Portius*, *Bontekoe*, *Gebema*, and others, have asserted it to be a most pernicious and unlawful Operation, and have termed the Practisers of it no less than the Destroyers and Butchers of Mankind. But Experience shews us, that all their Objections are trifling and unjust; and that there is no Remedy in the whole Art of Medicine, more ready, or more serviceable, in curing or preventing the generality of Diseases, than Phlebotomy. Some relate, that Physicians took the Hint of this Operation from the *Hippopotamus*, or Sea-horse, who, at certain Seasons, used to open a Vein with a sharp-pointed Reed. See *Polydore Virgil de Rer. Inventor.*

Bleeding, according to the vulgar Opinion, is a very easy Operation. In some Persons I own that the Veins are so large and conspicuous, that they may be opened by Novices, without Danger or Difficulty. But, in others, they are so small, or so deeply seated, that they cannot be discovered by the most expert Surgeon without Difficulty, nor opened without Danger. For the Arteries, or the Nerves and Tendons adjacent to the Veins, are very liable to be wounded by the Lancet; a Misfortune which is generally attended with violent Pains, Convulsions, Inflammations, profuse Hæmorrhages, Aneurisms, Gangrenes, and sometimes a most miserable Death; and, therefore, this Operation, as well as others, requires Caution and Attention, since the Reputation of young Surgeons, especially, may suffer as much by a timorous Introduction of the Lancet, so that the Blood follows not, as when, by affecting to perform easily and expeditiously, a Misfortune should ensue.

An expert Phlebotomist should have an active, gentle, and steady Hand, a clear Sight, and an intrepid Mind; for, without these Qualifications, he will be subject either to miss the Vein, or to occasion some Mischief, which may be fatal to the Patient. This is the Reason, why the Dexterity of Surgeons, in Bleeding, gradually declines, as they advance in Years; for, as Age increases, the Eyes become weak, and the Hands unsteady.

The Instrument now commonly used in opening a Vein, is called a Lancet, and is represented in *Tab.* XXII. *Lit.* A. and *Tab.* XXXII. *Fig.* 5. A Surgeon should always be provided with several of these Lancets, of different Sizes, and in good Order. Some Surgeons in *Germany*, particularly in *Franconia*, *Bavaria*, and the *Lower Saxony*, bleed with a Fleam (see *Tab.* XXXII. *Fig.* 3.) in this manner: With the Fingers of one Hand, they hold the Part B, and place the Point A upon the Vein; with a Finger of the other Hand, they strike the Part C, by which means the Point pierces the Vein, as Farriers do in bleeding Horses. Others use a sort of elastic Fleam, called by the *Germans*, *Schnapper*, or *Schnapperlein*, (see *Fig.* 4.) thus: Having raised the Point A, they apply it to the Part; and, by pressing at B, force down the Point into the Vein: Others use an Instrument shaped like a Dart. But, as these Instruments cannot be always adapted to the different Position and Figure of the Veins of different People, the Lancet seems to be more proper; tho' many of the *Germans* are very expert in the Use of their *Schnapper*.

Tho' Phlebotomy is used in various Parts of the Body, as in the Arm, Hand, Foot, Forehead, Temples, Neck, Tongue, Penis, and others; yet, as it is most frequently performed in a Vein of the Arm, which is near the Joint of the Elbow, we shall, therefore, begin with this Operation, and enlarge a little upon it.

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Of bleeding in the Arm.

It is commonly known, that Bleeding in the Arm is performed on the Veins placed on the Inside of the Cubit. In this Operation several Circumstances are to be considered: 1. What is to be done preparatory to the Bleeding. 2. How the Operation itself is to be performed. 3. and lastly, What is necessary to be done, in consequence of it. With regard to the preparatory Circumstances, the Surgeon must necessarily have in Readiness a Linen Fillet, about an Ell in Length, and of the Breadth of two Fingers. 2. Two small square Compresses. 3. Porringers, or Vessels, proper for receiving the Blood. 4. A Sponge, with warm Water. 5. A small Quantity of Vinegar, Wine, or *Hungary* Water, for relieving the Patient, if he should be inclinable to faint. 6. Two Assistants, not fearful, one to hold the Porringer, and the other to bring what may be wanted. 7. A small Wax-candle, when this Operation is necessary to be performed in the Night, or in a dark Place. 8. The Patient should be placed in a Chair a little reclined, or, if timorous, in a Bed, that he may not be in Danger of dropping off his Seat in a Swoon. 9. Lastly, The Surgeon should take care, that no Cloaths, and the like, should lie in the Way. The Patient should banish all Concern, and be by no means apprehensive of any Danger from the Operation. The Operator should be as expert in performing with his Left, as with his Right Hand; for the Vein in the Right Arm must be opened with the Right Hand, and in the Left Arm, with the Left Hand. Some will insist on being blooded in the Left Arm; and sometimes the Vein in the Right is not conspicuous, or proper to be opened.

With regard to the Operation itself, though it may be performed by a single Puncture, yet many Circumstances are necessary to be observed, for the better Execution of it. The Surgeon should narrowly inspect the Arm whence Blood is to be taken, in order to observe the Veins; then he must take hold of the Arm, and extend it towards his Breast. The Sleeve being tucked about an Hand's-breadth above the Elbow, he should make a tight Ligature about three Fingers-breadth above the Elbow, with a Fillet of the Breadth of a Thumb and a Yard in Length, rolling it twice, and fastening it with a Knot (See *Tab.* XXXII. *Fig.* 1. D); by which means the Veins, being compressed, and the Reflux of the Blood obstructed, are swelled, and rendered more conspicuous. This Fillet is generally made of a Piece of thin scarlet Cloth, though any other Colour may do. The Surgeon may now let go the Arm, and, taking out his Lancet, open it to an obtuse Angle, and hold it in his Teeth, at the Joint A, *Tab.* XXXII. *Fig.* 5. In the mean while the Veins grow more turgid, and more conspicuous. The Surgeon must now again lay hold of the Arm, and extend it towards his Breast, the Assistant being ready with the Porringer, and in the most convenient Situation, for receiving the Blood. The Surgeon must next examine, which Vein is most conspicuous, and, therefore, most proper for Incision. It is necessary to be observed here, that three principal Veins appear in the Arm: The first is called the *Vena Cephalica*, and lies towards the exterior Part of the Arm; the second is termed the *Basilica*, and is found towards the interior Part of the Arm; see *Tab.* XXXII. *Fig.* 1. A; it is, also, denominated, in the Right-arm, *Hepatica*, and, in the Left, *Splenetica*, as at B; the third, being situated in the Middle, obliquely, between the other two, is named *Mediana*, as at C. The Mediana and Basilica, being larger, generally emit the Blood more copiously, than the Cephalica, but they are opened with greater Danger; for, under the Basilica, lie the great Artery of the Arm, and the Brachial Nerve; and, under the Mediana is a Tendon, of the Musculus Biceps. But, as these two are most conspicuous, they are most frequently opened; though it is safer, especially for young Surgeons, to make the Incision in the Cephalic Vein, or, at least, in the Median. But, when the Veins are so situated, that only one of them can be made to appear, then there is no Choice left, and there is nothing to be depended upon, but the Skill and Care of the Surgeon.

When the Vein is already pitched upon, the Incision must be made where it is appears largest and conspicuous. If any Marks of former Wounds remain, it will be proper to open the Vein rather below, than above the Cicatrix; which generally straitens the superior Part. For this Reason, whenever you open a Vein for the first Time, begin as high as you can; by which means you may gradually descend in repeated Bleedings.

Before the Lancet be applied, if the Veins do not sufficiently rise, it will be proper to stroke the Arm from the Hand upwards, which will compress the Blood towards the Elbow, and make the Veins become more turgid. If the Incision is to be made in the Right Arm, the Surgeon is to hold the Arm in his Left Hand, in such a manner, that his Thumb may be placed upon the Vein which is to be opened, in order to prevent the Reflux of the Blood, and the Vein from sliding out of its Place.

The

The Vein being thus firmly held, the Surgeon muſt keep his Eyes fixed upon that Part, where he intends to introduce the Lancet. Then, taking the Lancet out of the Mouth with his Right Hand, he muſt hold it about the Middle of the Blade, between his fore Finger and Thumb, ſuffering the other Fingers to reſt gently upon the Patient's Arm, that his Hand may not ſlip.

Then the Lancet muſt be ſoftly and carefully puſhed by the fore Finger and Thumb, till it penetrates the Coats of the Vein; and the Point muſt be immediately turned a little upwards, by which the Wound may be enlarged, and the Diſcharge of the Blood may ſoon be rendered plentiful. Thoſe Orifices are reckoned moſt convenient, whoſe Length is equal to twice the Thickneſs of the Back of a ſmall Knife. The Lancet muſt be introduced, not with Raſhneſs, leſt, by penetrating too deep, an Artery, a Nerve, or Tendon, ſhould be wounded; nor with Timidity, leſt you ſhould only divide the common Integuments, without reaching the Vein. The Vein may be opened in three Directions: Some make the Wound lengthwiſe, as at *Tab.* XXXII. *Fig.* 2. A; others make it tranſverſe, as at B; but moſt Surgeons make it oblique, as at C and D. If the Inciſion is to made in the Left Arm, the Operator muſt hold the Arm in his Right Hand, and all muſt be done with the Left Hand, which was before propoſed to be done with the Right. If the Fleam at *Fig.* 3. be uſed in this Operation, the Point A muſt be applied to the Vein; and, the End B being held in the Left Hand, the Point muſt be driven into the Vein by the Stroke of a Finger of the Right Hand. If the elaſtic Fleam is to be uſed, let the Point A, placed above the Vein, be raiſed towards the Hook C; by a ſlight Preſſure at B, the Point is plunged into the Vein.

The Vein being thus opened, and the Inſtrument immediately drawn back, the Blood will either vigorouſly ſpring out, or flow gently. The Lancet muſt now be put into a Baſon, and never thrown upon the Bed, leſt it ſhould be accidentally loſt, or the Patient ſhould wound himſelf by it. In the mean time, the Blood ſhould be ſuffered to run, till a ſufficient Quantity is diſcharged. But if it ſhould ſtop too ſoon, as often happens from the Stricture of the Ligature above the Elbow, the Bandage may then be untied, or rather a little relaxed; by which means, the compreſſed Artery is again enlarged, and the Diſcharge of Blood is continued. If the Wound ſhould be ſtopt by too great a Tenſion of the Skin, or by Fat, the Piece of Fat ſhould be preſſed back with the Finger, or a warm Sponge, or the Skin may be relaxed by bending the Arm. If the Orifice ſhould be obſtructed by thick coagulated Blood, that Impediment may be removed by wiping the Wound with a Sponge dipt in warm Water.

That the Patient's Arm may not tire by being long extended, the Surgeon ought to ſupport it about the Elbow. A ſmall Stick, or Cylinder, ſhould be put into the Patient's Hand, which he ſhould continually turn round, by this Method accelerating the Motion of the Blood towards the Wound; which will be further promoted, if the Patient urges a little voluntary Cough. The Attendants ſhould be ready, with empty Veſſels for receiving the Blood, to remove ſuch as are filled, and to adminiſter the Compreſſes, Bandages, Cordials, and other Neceſſaries.

The Quantity of Blood to be taken away muſt be regulated by the Phyſician, according to the Nature of the Diſeaſe, the Temperament, Strength, and other Circumſtances, of the Patient. But, when the Surgeon attends his Patient without a Phyſician, he may determine the Quantity himſelf, according to the Nature of the Diſeaſe, the Strength, Age, Conſtitution, and other Circumſtances, of the Patient. If the Patient retains his natural Complexion, and neither grows languid nor faint, the Blood may be ſuffered to flow longer, than in thoſe who are ſoon affected with Paleneſs and Swooning.

When a ſufficient Quantity of Blood is diſcharged, the Bandage above the Elbow muſt be removed; and the fore and middle Finger of the Left Hand muſt be gently drawn over the Orifice, ſtroking the Skin on each Side of the Wound; by which means the Lips of the divided Vein are more eaſily preſſed together. Then let the Surgeon take the ſmaller Compreſs in his Right Hand, and apply it to the Wound, having firſt removed the Fingers of his Left Hand, that the Blood, between the Vein and the Skin, may be diſcharged, before the Compreſs be applied. Over this, lay another larger Compreſs, which muſt be retained with the Thumb, till the Whole be ſecured by the Bandage.

The Patient's Sleeve may now be drawn down over the Arm, which he ſhould keep bent towards his Breaſt; and the Patient ſhould be ordered not to uſe any Motion too ſoon, leſt a new Hæmorrhage, Inflammation, or Suppuration, ſhould be occaſioned. If the Patient ſhould faint away after the Operation, it will be proper to apply to the Noſtrils and Face ſome Cordial Water, as *Hungary* Water, or Vinegar, or Wine; or cold Water may be ſprinkled on the Face; or, if in the Summer-time, the Window may be opened, and the Spirits and Strength of the Patient reſtored by the Admiſſion of freſh Air. A ſmall Glaſs of Cordial Water, or generous Wine, ſhould, likewiſe, be given to the Patient.

It is cuſtomary for the Surgeon, or the Phyſician, if there is one preſent, to look at the Blood, and give his Opinion of it. In this Caſe, the Surgeon ſhould never diſcourage the Patient, whether the Blood be good or bad, or whether he retains his Senſes, or falls into Faintings. Favourable Accounts here greatly contribute to the Recovery of Health; but to diſhearten the Patient by a ſevere Prognoſtic, may occaſion very fatal Conſequences. If, therefore, the Blood appear florid, the Surgeon ſhould declare it a Sign of immediate or approaching Health; if the Blood be of a bad Colour, or vitiated, he muſt pronounce, that the Bleeding will be extremely ſerviceable. If the Patient ſhould fall into a Swoon, the Surgeon intimates, that this Weakneſs is an Evidence of the ſpeedy and ſalutary Effects of the Remedy. The Blood ſhould be ſet by in a cool Place, till the Phyſician, or Surgeon, renews his Viſit.

If, after Bleeding, the Patient ſhould be affected with Thirſt, he may be allowed to quench it, eſpecially if he can drink ſmall thin Liquors. *It is a Cuſtom among the French*, immediately after Bleeding, eſpecially if the Remedy is uſed to prevent Diſorders ariſing from the Heat of the Blood, to take a Draught of cold freſh Water: Which Method, in hot Habits, may be very ſerviceable; but in cold, infirm Conſtitutions, very prejudicial; for whom a little warm Tea, or Coffee, would be much more proper. The Patient may either be forbid or allowed to ſleep after the Operation, according to Circumſtances. If the Patient uſed Bleeding only by way of Prevention, it would certainly be more proper for him to divert his Drowſineſs by ſome agreeable Converſation, Amuſement, or Exerciſe; for, if Sleep be indulged, the Bandage may ſlip, and a violent Hæmorrhage be occaſioned. But thoſe who are extremely weak, or labour under ſome Indiſpoſition, ſhould by no means be hindered from Sleep, eſpecially if they have been troubled with tedious Watchings; for, by Sleep, the weak wearied Body is often wonderfully refreſhed. In the mean time, an Attendant ſhould carefully obſerve, that the Bandage continues faſt, or, if it ſhould ſlip, to ſtop the Flux of Blood, by compreſſing the Wound with the Fingers, till the Surgeon be called.

If, at the next Viſit, the Blood, as is uſual, ſhould be again brought to the Surgeon, and his Opinion of it aſked, he ſhould, as we before obſerved, ſay nothing, but what may tend to encourage the Hopes of the Patient. The Surgeon ſhould, likewiſe, inſpect the Dreſſing; and, if the Bandage be relaxed, he ſhould untie it, and apply it afreſh; if the Compreſſes adhere to the Wound, they ſhould not be removed; but, if they are looſe, they ſhould be again applied, and ſecured by the Bandage; which, being ſuffer'd to continue a Day or two, till the Wound be healed, may then be taken away. Some People, of an hot Conſtitution, will have the Blood run into cold Water, imagining, that by ſome ſecret Sympathy the Heat of the Blood may be by this means allayed. But, however trifling and falſe ſuch a Notion may be, yet as it may be complied with without Danger, and as it may have ſome good Effect upon the Imagination of a credulous Perſon, it ought not to be rejected, but permitted.

Of Bleeding at the Hand.

Phlebotomy is ſometimes practiſed on two Veins of the Hand, one of which is called the *Salvatella*, and the other *Cephalica*. The Salvatella extends on the exterior Part of the Back of the Hand towards the little Finger, being ſometimes named *Splenica* in the Left Hand, becauſe many antient Phyſicians believed, that the Opening of it was beneficial in Diſeaſes of the Spleen. The Cephalica runs between the fore Finger and Thumb, and was ſo denominated by the antient Phyſicians, becauſe they fanſied, that Bleeding from it was an excellent Remedy againſt Diſorders of the Head. Although it is plain, that Bleeding at the Hand is more difficult than in the Arm, and that all theſe Notions of the Antients are without Foundation, yet, ſince the Effect is the ſame with that of Bleeding in the Arm, it may be ſometimes proper for the Operation to be performed on the Hand; eſpecially if the Patient be prepoſſeſſed with a good Opinion of that Operation; or if the Veins of the Hand are more conſpicuous, than thoſe of the Arm. Some Women, too, in the laſt Months of their Pregnancy, or near the Time of their Delivery, prefer Bleeding at the Hand, which, they imagine, does not ſo much debilitate the Fœtus, as in the Arm.

In this Operation, therefore, it is proper for the Patient to bathe and rub his Hand in warm Water, that the Veins may ſwell, and become conſpicuous. The Bandage muſt be fix'd immediately about the Carpus, to keep the Veins turgid; then the Hand muſt be dried, and the Inciſion made in the moſt convenient Place, as was before directed. If the Blood flows but ſlowly, the Hand muſt be again dipped in warm Water, and

continue

continue there, till a ſufficient Quantity is diſcharged. Then the Hand may be dried, the Wound contracted by the Fingers, and the Compreſſes and Bandages applied as above directed.

Of Bleeding in the Foot.

Bleeding in the Foot is a very antient Operation, which has been obſerved by Phyſicians to be a moſt efficacious Remedy for various Diſeaſes of the Head and Breaſt, and, alſo, againſt thoſe Diſorders which proceed from an Obſtruction of the Menſes, or Hæmorrhoids. Hence the Veins of the Feet have long ago been called *Cephalica*, and *Saphena*. The Vena Cephalica extends towards the great Toe; and the Saphena towards the leſſer Toes. But, notwithſtanding the Difference of the Names, in Bleeding, they have both the ſame Effect; and, therefore, I think, the more conſpicuous of the two ought always to be preferred. However, when the Veins of the Feet do not ſufficiently appear, it will be more proper to open a Vein about the Ancles, the Calf of the Leg, or the Knees, as I have frequently done, eſpecially as the Nerves and Tendons of thoſe Parts are not ſo liable to be wounded, as thoſe of the Foot. But it is proper to adviſe the Surgeon here, to be cautious in bleeding ſingle Women at the Feet, without the Advice of a Phyſician; for ſome, under the Pretence of an Obſtruction of the Menſes, endeavour by this Method, to procure a Miſcarriage.

In order to facilitate the Performance of this Operation, let the Patient bathe his Feet in warm Water, till the Veins become tumid; and the Surgeon ſhould chooſe that Foot, in which the Veins are moſt conſpicuous. The Bandage ſhould be tied about the Breadth of two Fingers above the Ancle; and, whilſt the Surgeon is taking out his Lancet, the Patient ſhould keep his Foot in the warm Water, in order to increaſe the Riſing of the Vein. Then the Surgeon, kneeling on one Knee, and having dried the Foot, lays it on the other Knee, or on a Stool, or on the Edge of the Veſſel which holds the Water. He then takes the Foot in his Left Hand, and keeps the Vein fixed, as was directed for bleeding in the Arm. If the Veins appear not ſufficiently below the Ancles, it will not be improper to open them above, or in the Calves; and then the Ligature muſt be made at the Diſtance of the Breadth of two Fingers above the Place of Inciſion, and the Veins may be rendered conſpicuous by the Method already directed. We muſt, alſo, obſerve, with regard to the Surgeon's Poſture, that he may place himſelf before the Patient on a low Seat, and put the Foot on either Knee. When the Spring-fleam is uſed, as is often done in *Germany*, it will be then moſt convenient for the Patient to put his Foot on a low Stool.

The Vein being thus opened, the Blood may be received into proper Veſſels; and, if the Blood does not flow freely, let the Foot be again put into the warm Water, which will, alſo, prevent the Blood from congealing and ſtagnating in the Wound; an Accident which frequently happens. When a ſufficient Quantity of Blood has been thus diſcharged, which may be diſcovered, not only from the Time, but, alſo, from the Quickneſs or Slowneſs of the Evacuation, from the Redneſs of the Water, and eſpecially from the Strength of the Patient, the Orifice is to be ſtopt by a proper Compreſs and Bandage. The Advantages reſulting from this Operation may be ſeen in *Verduc*, *Caſpar Cadera de Heredia*, a *Spaniſh* Phyſician, *Stahl*, and others. Theſe Authors have been oppoſed by *Hecquet* of *Paris*, in his Book *ſur la Saignée du Pied*, and again defended by *Jo. Bapt. Sylva*, alſo, a Phyſician of *Paris*, in his Treatiſe *de l'Uſage des differentes Sortes de Saignées*, *Amſterdam*, 1729. He was anſwered in 1730, by *Chevalier*, a Phyſician, and, alſo, by *Queſnay*, a Surgeon, both of *Paris*.

Of Bleeding in the Forehead, Temples, and Occiput.

Some are of Opinion, that Bleeding at the Veins of the Forehead and Temples is more efficacious and expeditious in the Cure of violent Pains of the Head, of Vertigos, Melancholy, Madneſs, Deliriums, and the like obſtinate Diſorders of the Head, than the like Evacuation by Veins more remote from the Part affected; judging, that the morbid Matter may more readily be extracted by the Veins of the Forehead and Temples, by reaſon of their Vicinity. But, in my Opinion, the Situation of theſe Veins contributes very little towards haſtening the Cure, becauſe they have little or no Communication with the internal Parts of the Head, and they generally yield but a ſmall Quantity of Blood. The Jugular Vein ſeems to me much better adapted to this Purpoſe, as it is ſituated very near the Veins of the Forehead and Temples, which terminate in it, as it is larger and more conſpicuous, and as it communicates with the internal Parts. But if this Operation muſt be performed, either by Order of the Phyſician, or at the Requeſt of the Patient, the following Directions are neceſſary to be obſerved. Let an Handkerchief or Napkin, be drawn tight about the Neck; by which means the Jugular Vein being compreſſed, thoſe Branches of it may be become more conſpicuous. The Vein being open'd, the Patient ſhould incline his Head downwards, that the Blood, which is diſcharged ſlowly and gently, may not flow into his Eyes or Mouth. A ſufficient Quantity of Blood being evacuated, unleſs it ſtops ſpontaneouſly, as is often the Caſe, let the Wound be compreſſed with the Fingers, the Forehead and Face be waſhed, and afterwards let one or two Compreſſes, with a Bandage, be properly applied.

Bleeding at the occipital Veins, which communicate with the lateral Sinuſes of the Dura Mater, is proved, both by Reaſon and Experience, to be very beneficial in many Diſtempers of the Brain, eſpecially when it is neceſſary to avert and evacuate the Blood from that Part. The celebrated *Morgagni* particularly recommends it in obſtinate lethargic Diſorders, by Cupping and Scarifications; and *Zacutus Luſitanus* gives an Inſtance of an deſperate Apoplexy being cured by Cupping, and deep Scarification in the Occiput. *De Medic. Princip. Hiſt. Lib.* 1. *Hiſt.* 33. If the Inciſion is to be made with a Lancet, the ſame Method is to be uſed, as in opening the Veins of the Forehead and Temples.

Of Bleeding at the greater Canthus of the Eye.

Anatomiſts have obſerved, between the Noſe and the greater Canthus, on each Side of the Face, a Vein, proceeding partly from the Eye, and partly from the Forehead, which, like the Frontal Vein, deſcends to the external Jugular Vein. Bleeding in this Vein has been recommended by almoſt all Oculiſts, and particularly *Dionis*, as extremely ſerviceable in violent Inflammations of the Eye; tho', in my Opinion, with no better Reaſon than in the Veins of the Temple and Forehead. But, when this Operation is to be performed, let the Ligature be made about the Neck, as before directed, and let the Lancet be carefully introduced into the Vein. The Patient ought, likewiſe, to hold down his Head to prevent the Blood from flowing into his Mouth; and, as much Blood being diſcharged as may be neceſſary, apply a thick triangular Compreſs with proper Bandages. For Bleeding in the Eye itſelf, ſee Oculus.

Of Bleeding at the Jugular Veins.

The Operation of Bleeding at the external Jugular Vein, in violent Inflammations of the Neck or Quinſey, in Inflammations of the Brain, in Madneſs and Melancholy, in Inflammations of the Eyes, in Apoplexies, Head-achs, lethargic Diſorders, and violent Diſeaſes of the Head, is very antient; and many of the Moderns have recommended this Practice, becauſe, by it, the violent Influx of the Blood into the Part affected, and the Collection and Stagnation of the Humours, may be moſt expeditiouſly prevented. Beſides, there is no Danger in the Operation, as theſe Veins, extending on each Side of the Neck from the Head to the Clavicles, lie immediately under the Skin, and are ſufficiently large and conſpicuous. But, before the Inciſion, it will be proper to make a Ligature tighter than ordinary about the lower Part of the Neck, which muſt be ſtraitened by the Patient, or an Aſſiſtant, till the Veins become turgid; or, a looſe Bandage being thrown about the Patient's Neck, it may be drawn down towards his Breaſt by himſelf, or an Aſſiſtant. By this means the Jugular Veins, being compreſſed on each Side, will become more turgid, without obſtructing Reſpiration.

When the Veins are ſufficiently tumid, that is to be choſen which is moſt conſpicuous, when the whole Head or Fauces are affected; but when the Diſeaſe lies only on one Side of the Head, or in one of the Eyes, that Vein is, in my Opinion, to be preferred, which is ſituated on the morbid Side. A ſufficient Quantity of Blood being drawn, the Ligature muſt be removed, the Wound compreſſed by the Finger, and Compreſſes with a circular Bandage muſt be applied; and thus the Bleeding is ſtopt without any Danger of a freſh Hæmorrhage, as I have often experienced. It is, indeed, true, that the Patient is very ſubject to faint in this Operation; but that Circumſtance is attended with no bad Conſequence. *Tralles*, a learned Phyſician of *Breſlaw*, publiſhed in 1735. an excellent Treatiſe on the Uſefulneſs of this Operation.

The Method of Bleeding in the Venæ Raninæ.

Bleeding in thoſe Veins, under the End of the Tongue, is by ſome eſteemed beneficial in a Quinſey, or Inflammation of the Neck, eſpecially if a Vein has been before opened ſeveral times in the Foot, Arm, or Neck; for, by theſe means, the inſpiſſated and ſtagnant Blood is gradually diſcharged. The Operation may be thus performed: Make a Ligature about the Neck, as was already directed; then, raiſing the End of the Tongue with the Left Hand, carefully open both theſe Veins with the Lancet, one after another; for one of them will never

diſcharge

discharge a sufficient Quantity of Blood. When it becomes necessary to stop the Hæmorrhage, unbind the Ligature, and it commonly ceases spontaneously; but, if it should still continue, let the Patient hold a little Vinegar, or *Pontac* Wine, in his Mouth; or, if necessary, apply to the Wound a little Vitriol, or Alum, or a Compress dipt in some astringent Medicines, till the Bleeding stops. But there is seldom any Danger of a violent Hæmorrhage here; and, unless the Discharge be copious, in Diseases of the Fauces, little Effect can be expected from it.

The Method of Bleeding by the Veins of the Penis.

In some violent Inflammations of the Penis, this Operation has a wonderful Effect, and is sometimes more successful than almost every other Remedy. Introduce your Lancet about the Middle or back Part of that large Vein, which runs along the superior Side of the Penis, and is already sufficiently tumefied from the Nature of the Disorder; let the Evacuation be continued, till the Penis becomes flaccid, or till a Quantity is discharged proportionable to the Degree of the Disease. Then the Wound may be closed with the Finger, and Compresses are to be applied, with a Bandage proper for the Penis. Particular Care must be taken in this Operation, to avoid wounding the adjacent Nerves and Arteries, which might produce fatal Effects; and not to make the Bandage too tight, which might increase the Inflammation.

Of the Accidents which arise from Bleeding.

The Method of treating an Ecchymosis.

An Ecchymosis is an Extravasation of the Blood, from the Vein, between the Flesh and the Skin. Of this Disorder there are different Degrees; as when a great Part of the Arm is so violently affected, that it not only becomes livid, black, and swelled, but is, likewise, affected with Inflammations, Pains, Suppurations, and a Gangrene.

This Disorder is produced, either when the Surgeon has cut the Vein entirely through, or, which is more frequently the Case, when the Patient has used some violent Exercises, especially of the wounded Arm, too soon after the Operation; for by these means it may very readily happen, that the Blood may be extravasated from the wounded Vein, between the Flesh and Skin, more or less in proportion to the Violence of the Exercise.

When the Quantity of extravasated Blood is but small, little Danger is to be apprehended; for the stagnant Blood may be easily discussed, by applying a Compress dipt in Vinegar and Salt, or in Spirit of Wine. Sometimes the Blood degenerates into Pus, and then the Suppuration should be promoted by a Diachylon-plaister; and when the Matter is once ripened, it will spontaneously make its Way by Degrees, without Incision. As long as any Pus appears to be discharged, it should be daily expressed with the Fingers, and the Wound may be healed with a Diachylon-plaister.

If the Quantity of stagnating Blood be very considerable, there is little or no Hope of a Discussion: For the vitiated Blood generally degenerates into a violent Inflammation and Suppuration, and sometimes into a Gangrene. In order to prevent these Consequences, let the Surgeon make frequent Incisions in the livid Part, for evacuating the stagnating Blood. He may then apply a Diachylon-plaister, or Fomentations proper for Contusions, or Phlegmons. But if, as often happens, a violent Inflammation, or even a Gangrene, affects the Arm, it ought to be frequently scarified, and digestive Fomentations, or Cataplasms, should be applied. But, in these Cases, it is often necessary to take a sufficient Quantity of Blood from another Part of the Body, and to exhibit resolvent Medicines internally, till the Violence of the Inflammation, or the Gangrene, abates; or till it entirely ceases.

The Method of treating a Nerve or Tendon wounded in Bleeding.

A Nerve or Tendon may be certainly known to be wounded in Bleeding, if the Patient, at the time of Incision, feels most acute Pains, so that he can scarcely refrain from a vehement Outcry; especially if the Pains continue, and are followed by Tumors, Inflammations, Spasms, or, likewise, a Rigor and Convulsions of the Limb: Which Symptoms, if not timely relieved, are succeeded by most dangerous Convulsions, a Gangrene, and Death itself.

Among the various Methods of remedying this Malady, that seems the most excellent, which was formerly performed by *Paré* on the *French* King *Charles* IX. No sooner had the King signified his Pain, by crying out at the Instant that the Vein was opened, than *Paré* justly suspected, that a Nerve had been wounded. Immediately the Arm began to swell, and grow rigid, with the Acuteness of the Pain. Hereupon the King's Physicians, in Consultation with *Paré*, agreed upon the following Method: They first injected into the Wound, Oil of Turpentine with rectified Spirit of Wine; then they applied to the whole Arm the Emplastrum Diachalciteos, dissolved in Vinegar and Oil of Roses; then they used the expulsive Bandage, beginning at the Hand, and ascending gradually in continued spiral Turns to the Shoulder; by which means, the violent Impulse of the Blood, and the Inflammation, were not only abated, but the Pain, also, diminished by degrees. In order to complete the Cure, they applied to the Arm the following Cataplasm, till the Pain entirely ceased.

> Take of the Meal of Barley, and Vetches, each two Ounces; of the Flowers of Chamomile, and Melilot, each two Handfuls; of fresh Butter, an Ounce and an half: Boil them in Soap-suds into a Cataplasm.

Thus, though the natural Activity of the Arm was impaired for three entire Months, yet it gradually recovered its former Strength.

However, it may not be improper, in this Method of Cure, to substitute, instead of the Oil of Turpentine, and Spirit of Wine, the *Peruvian* Balsam, or *Hungary* Water, which may be for some Days instilled into the Wound, till the Pain diminishes. As the Emplastrum Diachalciteos is rarely to be found in the Shops, in room of it, the Emplastrum Diapompholygos, or the Plaister of red Lead, may be used. But great Care must be taken, whilst the Remedies are preparing, that the Wound be not exposed to the Air. It will, therefore, be proper, immediately to apply any Sort of Plaister, which is the readiest, to the Wound, and to wrap up the whole Arm in Linen Cloths moisten'd in Oxycrate, which will both lessen the Inflammation, and defend the Wound from the Injuries of the external Air. If the Patient be of a vigorous plethoric Habit, Bleeding in another Part may tend to prevent the Inflammation. *Scultetus*, in *Obs.* 87. gives a certain Ointment, which he commends as an excellent Remedy in Punctures of the Nerves; where he, also, informs us, that he has successfully divided entirely, or cut through, some of these wounded Nerves. *Heister's Surgery.*

PHLEBOTOMUS. A Lancet, or a Fleam: Instruments used for Bleeding.

PHLEDONODES, φλεδονώδης. See Phlebodonodes.

PHLEGMA, φλέγμα. Phlegm. Every Humour, says *Galen*, *Lib.* 2. *de Diff. Feb. Cap.* 6. which is both cold and humid, comes under the Denomination of *Phlegma*, "if we "would speak in the Language of *Hippocrates*, and according to the usual Custom, not only of the antient, but modern "*Greeks*; or," as he says a little after, "if you please, you "may call it *Scindapsus*." Of Phlegm there are four Species, the vitreous, sweet, acid, and salt: These are reduced by *Galen*, *de Diff. Feb. Lib.* 2. *Cap.* 6. to three. But, in his Book *de Plenitud.* he makes five Species of it.

Phlegma, also, in *Hippocrates*, as *Galen* says in his *Exegesis*, signifies not only a white and cold Humour, but, also, an Inflammation [φλέγμονη]. Instances to this Purpose are innumerable.

Phlegmasia, φλεγμασία, in the same Author, signifies not only an Inflammation in the common, but is sometimes to be understood of the violent Heat excited by a Fever; as *Lib. de R. V. I. A.* But φλεγμασίη τῆ ἰρῆ is a pituitous Sort of Urine, abounding with a gross and cold Humour.

Phlegmainon, φλεγμαίνω, signifies not only inflamed, but sometimes imports tumid, and increased in Bulk; as may be shewn from many Places in *Hippocrates*, in which ἰσχναίνειν, *to extenuate*, and φλεγμαίνειν, *to induce a Tumor*, are set in Opposition: Many Instances of this Sense of the Verb may be given from the Book *de Locis in Homine*. *Foesius.*

PHLEGMAGOGUS, φλεγμαγωγὸς, Phlegmagogue. An Epithet for such Cathartics as purge off Phlegm.

PHLEGMASIA, φλεγμασία. An Inflammation.

PHLEGMATIÆ, φλεγματίαι. Persons abounding with Phlegm are thus called, by *Hippocrates*.

PHLEGMATORRHAGIA. *Salmuthus*, *Observat.* 37. *Cent.* 1. gives an Account of a Disorder, which he calls by this Name. This was a very considerable Flux of thin Phlegm from the Nostrils, which continued for three Days, and was cured by the Use of the Cephalic Pills.

PHLEGMONE, φλεγμονή. A Phlegmon, or Inflammation. See Inflammatio.

PHLEGMONODES. Resembling an Inflammation.

PHLEPS, φλέψ. A Vein. But among the Antients it signified both the Arteries and Veins.

PHLIÆ, φλίαι, in the Scammum of *Hippocrates*, or other Machines of that Kind, are the upright wooden Posts, which are bored to receive the Ends of the Axes, and in which they turn. *Oribasius de Machinamentis*, *Cap.* 24. Or, as *Galen* explains

plains it, in his *Exegeſis*, ſtrait Pieces of Wood, fixed oppoſite to each other, like the Poſts of a Door.

PHLOGINON, φλογινόν. The Name of a liquid Collyrium, deſcribed by *Galen*, *Lib.* 4. *de C. M. S. L. Cap.* 7.

PHLOGISTOS, φλογιστός. Inflammable. The Liquor called *Æther*, is called, alſo, *Phlogiſton*, on account of its great Inflammability.

PHLOGIUM. A Name for the *Viola*; *tricolor*; *hortenſis*; *repens*.

PHLOGODES, φλογώδης. Of a Flame-colour, intenſely red, inflamed.

PHLOGOEIDES, φλογοειδής. The ſame as PHLOGODES.

PHLOGOSIS, φλόγωσις. An Inflammation; or an Heat and Exeſtuation of any Part, without an inflammatory Tumor. *Willis* ſpeaks frequently of a Phlogoſis of the animal Spirits; but, I am afraid, no juſt Idea can be framed of ſuch a Phlogoſis, till ſuch time as we know, that animal Spirits really exiſt, and we are better acquainted with their Natures.

PHLOMIS.

The Characters are;

The Root is perennial; the Leaves thick; the Galea large, hollow, falcated; the Beard trifid, the middle Segment being large, broad, marginated, and extended beyond the Galea, which cloſely preſſes upon the Beard: The Calyx is a ſhort, wide, pentagonal Tube, ſometimes indented: The Seeds are oblong.

Boerhaave mentions eight Species of Phlomis; which are,

1. Phlomis; Narbonenſis; folio Hormini; flore purpuraſcente. *T.* 178. *Marrubium*, *nigrum*, *longifolium*. C. B. P. 230. *Herba venti*, *Monſpelienſibus*. J. B. 3. App. 854.

2. Phlomis; fruticoſa; Salviæ folio latiore, & rotundiore. *Tourn. Inſt.* 177. *Boerh. Ind. A.* 160. *Phlomis*. Offic. *Salvia fruticoſa lutea latifolia*, *ſive Verbaſcum ſylveſtre quartum Matthioli*. Park. Theat. 51. Raii Hiſt. 1. 511. *Verbaſcum latis Salviæ foliis*. C. B. P. 240. *Verbaſcum Matthioli*. Ger. 625. Emac. 767. YELLOW SAGE.

It is cultivated in Gardens, and flowers in *June*: It is aſtringent, and reckon'd among vulnerary Plants.

3. Phlomis; fruticoſa; Salviæ folio longiore, & anguſtiore. *T.* 177. *Verbaſcum ſylveſtre*. Dod. *Pſeudo-ſalvia*, *fruticoſa*, *minor*, *lutea*, *Verbaſci foliis incanis*. M. H. 3. 397.

4. Phlomis; fruticoſa; folio ſubrotundo, breviore, flore luteo. *Verbaſculum*, *ſalvifolium*. Alpin. Exot. 109. *Pſeudo-ſalvia*, *minor*, *Cretica*, *lutea*. M. H. 3. 397.

Dioſcorides ſays, that the Flowers are good to dye Hairs of a Gold-colour; and that the Leaves cure Ambuſtions. *Galen* writes, that the Leaves are moderately drying, and digeſtive. *Proſper Alpinus de Plantis exoticis*.

5. Phlomis; Samia; herbacea; folio Lunariæ. *T. Cor.* 10.

6. Phlomis; Orientalis; folis laciniatis. *T. Cor.* 10.

7. Phlomis; Orientalis; anguſto & longiori folio; flore luteo. *T. Cor.* 10. *Boerh. Ind. alt. Plant. Vol.* 1.

The *Phlomis fruticoſa* was called by the Antients *Verbaſcum*; for which Reaſon *Tournefort* makes it belong to that Kind. The medicinal Virtues are not known; only it is recommended with the Lamium and Galeopſis: The Juice, however, is emollient. *Hiſt. Plant. adſcript. Boerhaav.*

PHLUS, φλῦς. This Word occurs, *Lib. de intern. Affect.* where we read, ᾗ ἐν τῇ κεφαλῇ ὑπὸ τὰς τρίχας δίον φλῦς ὕπεστι· *And on the Head, under the Hairs, there is, as it were, a Cortex.* In this Paſſage φλῦς ſignifies the ſame as φλόος (*phloos*), or φλοιὸς (*phloios*), that is, a Cortex, or ſcaly Skin, like the Exuviæ or Slough of a Serpent: For which Reaſon *Calvus* renders the Word *ſquamulas*, "ſmall Scales." *Heſychius*, alſo, expounds φλῦς by φλοιὸς, λεπύχανον (*Lepychanon*), and λεπυρὸν (*Lepyron*), Words much of the ſame Import.

PHLYCTÆNÆ, φλυκταίναι, from φλύζω, to boil. Small Eruptions on the Skin, ariſing from an hot or acrimonious Humour. *Hippocrates* ſometimes repreſents them, as reſembling thoſe Puſtules which appear after Ambuſtions.

PHLYCTÆNOIDES. An Epithet of Puſtules which reſemble *Phlyctænæ*. *Blancard*.

PHLYCTIDES, φλυκτίδες. The ſame as PHLYCTÆNÆ.

PHLYSIS. An Eruption on the Skin, from a Redundance of Humours. *Caſtellus* from *Galen*.

PHLYZACION, φλυζάκιον. A Puſtule, or Veſication on the Skin, excited by Fire or Heat. Sometimes it imports the ſame as PHLYCTÆNÆ.

PHOCA, or *Vitulus Marinus*. The Sea Calf. An amphibious Animal, which lives ſometimes in the Sea, and ſometimes on Shore, but moſt in the Sea. It is ſaid, that the Fins of this Animal, eſpecially thoſe taken from the Right Side, excite Sleep, when applied to the Head: Its Fat has an emollient Quality, and, if rubbed on the Region of the Uterus, is thought proper to provoke the Menſes, and remove Vapours: Shoes made of the Skin of it are, alſo, thought to be a good Preſervative againſt the Gout. *Lemery*, *Traité des Drogues*.

PHOCÆNA. A Species of Dolphin, ſomewhat thicker and ſhorter than the ordinary Kind; the Fat of which is eſteemed reſolutive, and good for the Nerves. *Lemery des Drogues*.

PHODES, or PHOIDES, φῶδες, or φοῖδες. The ſame as PHAUSINGES.

PHOENICITES. A Name for the *Judaicus Lapis*.

PHOENICIUM EMPLASTRUM. The *Emplaſtrum Diachalcites*, or *Diapalma*.

PHOENICIUS MORBUS. The *Elephantiaſis*. See LEPRA.

PHOENICOPTERUS, φοινικόπτερος. The Name of a Bird, frequently mentioned by the Antients, whoſe Tongue and Brains were eſteem'd great Delicacies. I don't know, that it is certain what Bird this was; but, by the Derivation, it ſhould have red Wings.

Lemery deſcribes the Phœnicopterus, as a Bird as large as an Heron, of an Aſh-colour, with a crooked Bill, and very long Neck, which lives upon ſmall Fiſh, and Shell-fiſh: He ſays it is eſteem'd aperitive, and good for the Epilepſy; and that the Fat is reſolutive, and good for the Nerves.

PHOENICURUS. The Name of a Bird called, alſo, *Rubecula*, *Ruticilla*, and *Erithacus*. *Lemery* ſays, it is about the Size of a Cuckow, and has a red Tail, as the Derivation of the Name imports. It is eſteem'd good for the Epilepſy, either eaten, or in Broth. The Fat is reſolutive, and anodyne.

PHOENIGMUS, φοινιγμὸς, from φοῖνιξ, a red Colour. A Rubification, or Rubefaction, of the Skin; that is, an Excitement of a Redneſs of the Skin, by means of acrid Applications.

PHOENIX. A Name for the *Gramen*; *Loliaceum*; *folio & Spica anguſtiore*. See LOLIUM.

PHOLAS. The Name of a Sea Shell-fiſh, ſomewhat like a Muſſel, which grows to the Rocks at the Bottom of the Sea, and is ſaid to be good Food. The Shell, powder'd, and taken internally, is ſaid to be aperitive, and good for the Stone.

PHOLIS, φολὶς. A Scale of Metal.

PHOLLIDODES, φολλιδῶδες, *Lib.* 4. *Epid.* is apply'd to Tumors in the Legs, and ſignifies ſoft, lax, and fungous, as in thoſe who labour under an *Anaſarca*, and eſpecially, a *Leucophlegmatia*. All the Copies, indeed, read φολιδῶδες, which *Calvus* renders *ſquamous*, becauſe φολὶς is the ſame as λεπὶς (*lepis*) a Scale like that of Fiſhes, or Serpents. Whence the Paſſage in *Hippocrates* above-mention'd, ſuppoſing this to be the true Reading, may be underſtood of ſuch Tumors in the Legs, as, by reaſon of the Drineſs and Corrugation of the Skin, and the want of Aliment, are cover'd with a ſcaly ſort of Subſtance, as with a Cortex, as is often obſervable in the Legs and Feet, and other Parts, under a Cachexy or Dropſy. But perhaps for φολλιδῶδες we are to read φολλικῶδες (*Phollicodes*) which ſignifies fungous, lax and empty like Huſks, void of Seeds, as *Galen* expounds the Word in his Exegeſis, with an Eye, it is probable, to the Place in *Lib.* 4. *Epid.* where it is ſaid, τὰ φολλικώδεα φλυκταινήμενα, "the puſtulous Eruptions were ſoft "and lax." *Erotian* expounds φολλικώδη by ἐφηλώδη and λεπρώδη, ſquamous and ſcabrous, as if exaſperated by the *Lepra*; for the Antients, he ſays, called the Aſperities of the Skin, proceeding from the *Piſora*, and the like Affections, by the Name of φόλλικες, *Phollices*. And this affixes a very different Idea to the Word, which muſt then be underſtood of thoſe Tumors, which are exaſperated with a ſort of ſquamous Cruſt, as is ſometimes obſervable in cachectic Bodies.

PHORACIODES, φορακιώδες, from φορὸς (*phoros*), which in the Exegeſis is expounded by εὐσύλλεπτος (*eyſylleptos*), diſpoſed for Conception, *Lib.* 2. γυναικ. is ſpoken of the Orifice of the Uterus, as open and duly qualified in order for Conception. But *Foeſius* ſuſpects, that the Word ought to be read φαρκιδῶδες (*pharcidodes*), which *Galen* and *Erotian* expound by ῥυτιδῶδες (*rutidodes*) corrugated. But he ſhould rather like to read, he ſays, φοργανῶδες (*phorganodes*), becauſe φοργάνη (*Phorgane*) is expounded, in *Heſychius*, by ἀραιώσις (*Araeoſes*), as importing the Orifice of the Uterus to be lax, rare, and open; which, *Lib. de Mulieb. Nat.* and *Lib. de Morb. Mul.* on the ſame Occaſion, is expreſſed by εὐρὺ (*eury*), wide, expanded.

PHORIMOS, φόριμος. An Epithet for that Species of Alum, which is call'd in the Shops, Roch-alum.

PHORINE, φορίνη. The Skin of a Man or Beaſt, or, according to *Pollux*, an Hog's-skin. Thus, *Lib. de R. V. I. A.* ſpeaking of Swines-fleſh, it is ſaid, that it ought to be eaten ἄνευ τῆς φορίνης, that is, as *Galen* ſays, in his Commentary, ἄνευ τῆ δέρματος, "without the Skin." Φορίνη is, alſo, ſpoken of the human Skin, which by ſome, too, is called πυρίνη (*Pyrine*), as *Heſychius* obſerves.

PHOS, φῶς. Light; but it, alſo, ſignifies the black Circle, which ſurrounds the Pupil of the Eye.

PHOSPHORUS, from φῶς, Light, and φέρω, to bring. The Name of a *Collyrium*, in *Galen*, *L.* 4. *de Comp. M. S. L. Cap.* 7. It is the ſame as the DIACROCU.

There are ſeveral Chymical Preparations call'd by this Name, which ſhine in the Dark, ſome of which I have taken Notice of under the Article ALUMEN.

HISTORY OF PHOSPHORUS.

The *Phoſphorus igneus* differs from other naturally ſhining Bodies, in this, that it is in reality nothing but a kind of concealed Fire, which diſcovers itſelf by its Light and Smoke; but, if you rub it harder, it will break out into a Flame. This Diſcovery appeared about the Year 1677; but was preceded by *Baldwin*'s Phoſphorus, which is an artificial Imitation of the natural *Bolognian* Stone. *Chriſtopher Adolphus Baldwin*, Governor of a certain Place in *Miſnia*, happened to diſſolve Chalk in Aqua Fortis, or Spirit of Nitre, which laſt he again brought over by the Fire; and he found the remaining Body to imbibe the Light, when expoſed thereto, and retain it for ſome time, and carry it along with it into a dark Place, as a Sponge does the Water it has imbibed. This Experiment did not a little ſtartle the *Carteſians*, (very few of whom had ſeen the *Bolognian* Stone) that Light ſhould of a ſudden become a groſs and portable Thing, whoſe Rays they ſuppoſed to conſiſt in Preſſion only, and to be propagated in an Inſtant of Time. *Baldwin*, in an obſcure manner, deſcribed his Experiment in a Treatiſe intituled *Aurum Auræ*.

To this ſucceeded *Brand* of *Hamburgh*'s Invention, named the Phoſphorus igneus, the Pyropus, and afterwards, by way of Eminence, the Phoſphorus, which was diſcovered in this manner. *Brand* had fallen on a Chymical Proceſs, extant in a printed Book, which taught how to prepare from Urine a Liquor fit to ripen a Particle of Silver into Gold; and in labouring on this he found out his Phoſphorus. He had ſome Acquaintance with *Jo. Daniel Kraft*, of the Council of Commerce to the Elector of *Saxony*; and, by his means, with *Jo. Kunkel*, one of the ſaid Prince's Bed-chamber; but who, under that Character, performed Chymical Proceſſes. On perſuading *Brand*, that this Arcanum might be ſold to the Great at an high Price, and offering him their Aſſiſtance, they obtained the Compoſition from him. And, upon going from *Dreſden* to *Hamburgh*, they both ſaw and learned from him the Proceſs of the Phoſphorus. But *Kunkel*, upon his Return Home, had committed ſome Miſtake in the Proceſs, and for a long time could not hit upon the Phoſphorus; and he ſent a Letter to *Brand*, complaining that the Secret was not ſincerely communicated to him. But *Brand*, repenting that he had been ſo eaſy in imparting the Secret, delayed to ſatisfy him. *Kunkel*, in the mean time, after various Trials, corrected the Error himſelf: Whence he pretended to be the Inventor; and of this *Brand* bitterly complained.

Kraft, who was a Man of a good Addreſs, undertook to vend the Diſcovery among the Great; and, in his Way to *England*, he made me a viſit at *Hanover*; and ingenuouſly mentioned to me, both the Matter of the Proceſs, and its Author *Brand*; and he likewiſe ſhewed the Experiment of the Phoſphorus, to the great Surprize of Duke *John Frederic*; and afterwards in *England* to K. *Charles* II. Prince *Rupert*, the illuſtrious Mr. *Boyle*, and others, of which there is an Account by Dr. *Hook*. But he never, as far as I know, mentioned himſelf as the Inventor. The Phoſphorus was firſt ſent into *France* by me to *Huygens*; and at length the Compoſition it ſelf was, by the illuſtrious *Tſchirnhauſen*, upon his Return from *Germany* into *France*, communicated from me to the Royal Academy, to whom *Huygens* had already ſhewn the thing. That *Boyle* had got but an imperfect Deſcription of it, appears from his Diſſertation on Phoſphorus; for his Phoſphorus differs from *Brand*'s only in this, that it is more imperfect.

But Duke *John Frederic*, as he was a magnificent and generous Prince, ordered that I ſhould ſend for the Inventor: *Brand*, therefore, came to *Hanover*, and faithfully communicated to us the Proceſs; for, whatever he did, I imitated in another Laboratory. Upon collecting a large Quantity of Urine, *Brand* came to us, and went through the Proceſs. Upon *Brand*'s Return to *Hamburgh*, the Duke ſettled an annual Penſion upon him, which was punctually paid him till the Duke's Death; and this probably was the only conſiderable Encouragement which he reaped from his Phoſphorus.

I myſelf ſhewed to the ſame Prince, who was very curious in theſe Matters, another kind of Phoſphorus, which we may call the *Thermophoſphorus*, which does not acquire its ſhining Quality from Light, as the *Bolognian* and *Baldwin's* Phoſphorus, but from Heat. There is a kind of Subſtance found in Mines, capable of being diſſolved by Fire, with the Powder of which if you draw Letters and Figures on an iron Plate, and lay the Plate upon burning Coals, the Strokes ſhine, though the Plate be not ignited, and though the Rays of Light cannot penetrate from the Coals to the Figures.

It is a thing commonly known, that hard Bodies acquire Heat, and at laſt take Fire, by Motion; and the Flame produced by the Attrition of two Pieces of Wood was, by the antient *Saxons*, regarded as a religious Ceremony. But we are not ſo well acquainted with the Manner, in which Smiths at our Mines kindle the Fire extinguiſhed in their Forges. They ſtrike, with an Hammer, an iron Bar on its very Edge, and which is wont to come from the Mines, in the Form of a quadrangular Priſm. This Bar they ſhift, that the Edge may be alternately ſtruck, now on the Right, and again on the Left: Thus it immediately becomes hot, and, after repeated Blows, glowing hot, ſo as to ſet on Fire any inflammable Matter.

We have, beſides, other kinds of Phoſphori, in which there are no Traces of Fire, the principal of which we owe to *Joh. Bernouilli*, who has improved the Obſervations of others on Mercury ſhining in Vacuo, and carried it ſo far, that now it may be produced at Pleaſure; whereas before Mercury was rarely, and by chance, made to ſhine. It is credible, that this Phoſphorus always retains its ſhining Quality, or, at leaſt, for a long time; becauſe it does not ſtand in need of the free Air to make it ſhine, like the Phoſphorus igneus, but emits a Light by only ſhaking it in a Glaſs, hermetically ſealed; and with this the King of *Pruſſia* was ſo well pleaſed, that he rewarded the Inventor with a Gold Medallion. I underſtand, that M. *Dutal* at *Paris*, and others, have laboured with remarkable Succeſs in eſtabliſhing and promoting this Phoſphorus. It would be worthy Inquiry, what Quantity of Light might be produced by many ſuch Phoſphori, continually ſhook; for a continued Shaking may eaſily be effected by means of a Machine, and the Light of many Phoſphori may be collected either by Refraction or Reflexion, an Experiment which I wonder has not been hitherto attempted. *Leibnitz*, in the *Miſcellanea Berolinenſia*.

DR. SHAW'S ACCOUNT OF PHOSPHORUS.

We took half a Dram of Camphire, and ground it in a glaſs Mortar, with three Grains of the ſolid Phoſphorus of Urine; then added as much eſſential Oil of Cloves, as ſerved to reduce the Whole to a fluid Form. The Mixture thus made may be rubbed upon the Clothes, the Hair, or the Hands, without Danger of Burning.

The ſucceſsful Method of making it is this: Evaporate any Quantity of freſh Urine over a gentle Fire, to a black, and almoſt dry Subſtance; then with two Pounds thereof thoroughly mix twice its Weight of fine Sand. Put the Mixture into a ſtrong-coated Retort of Stone; and, having poured a Quart or two of clear Water into a large Receiver with a long Neck, join it to the Retort, and work in a naked Fire; let the Heat be ſmall for the two firſt Hours; then increaſe it gradually to the utmoſt Violence, and continue thus for three or four Hours ſucceſſively. At the Expiration of which Time, there will paſs into the Receiver a little Phlegm, and volatile Salt, much black fetid Oil, and, laſtly, the Matter of the Phoſphorus in form of white Clouds; which either ſtick to the Sides of the Receiver, like a fine yellow Skin, or fall to the Bottom in form of a ſmall Sand. Now let the Fire go out; but take not away the Receiver, before it is cold, for fear of ſetting the Phoſphorus on Fire by admitting the Air. To reduce theſe ſmall Grains into one Piece, put them into a little Tin Ingot-mould, along with Water; heat the Ingot to make the Grains melt together; then add cold Water, till the Matter is congealed into one ſolid Stick, like Bees-wax; which, being cut into little Pieces, fit to enter the Mouth of a Phial, may be preſerved by Water, and keeping the Glaſs cloſe ſtopped. If the Glaſs were not to be ſtopped, the Phoſphorus would turn black on its Surface, and at length be ſpoiled.

The Cautions required to make the Proceſs ſucceed are; 1. To evaporate the Urine, while it is recent. 2. To prevent its boiling over, and ſo loſing the moſt unctuous Part. 3. To let the Matter afterwards ferment in the Cold. 4. To mix the black Matter with Sand, to prevent its melting and running together. 5. To uſe a Stone Retort, thoſe of Earth being too porous, and ſuffering the Phoſphorus to tranſude ſooner than paſs into the Receiver. 6. To have the Receiver very large, and with a very long Neck, to prevent its breaking and over-heating; which would either evaporate the white Vapour, wherein the Phoſphorus conſiſts, or elſe prevent its coagulating. 7. To put Water into the Receiver for keeping it cool, and quenching the Phoſphorus, as it falls to the Bottom. 8. To make the Fire ſmall at firſt, that the Retort may be preſerved, and the black Matter gradually dried; which would otherwiſe ſwell and come over in a black Froth. Laſtly,

it

it is found neceſſary, that the Urine for the Operation be of ſuch as uſe Malt Liquors, rather than Wine. All theſe Circumſtances being required for obtaining the Phoſphorus to Advantage, no wonder if ſo many of thoſe who attempted it miſcarried.

This Operation may be greatly ſhortened, by freezing and concentrating freſh Urine; afterwards evaporating it with Care; then digeſting it *per ſe*, in the manner above-mentioned. When thoroughly digeſted, commit the Matter, in a large Quantity, to an iron Pot, with an earthen Head, as the Chymiſts uſually do, for making Spirits of Hartſhorn, or the Spirit and Salt of Urine. When thus all the Salt and Oil are obtained, let the *Caput Mortuum* be taken out, and mixed with twice its own Weight of Alum. The Matter may now be put into a well-coated long Neck, and worked with Care in a reverberatory Furnace, into very large Receivers filled with Water, and connected to the Necks by Adapters; the lower Ends whereof may enter the Water, as in diſtilling of Quickſilver; the Operation being continued for eight or ten Hours. And this we apprehend to be the beſt way hitherto known of procuring Phoſphorus to Advantage. Dr. *Wall* informs us, that Mr. *Boyle*, being concern'd to find how ſmall a Proportion of Phoſphorus was afforded by Urine, deſired him to look out for another Subject, that might afford it in greater Plenty. The Doctor afterwards cauſing a Piece of dry Matter to be dug up in the Fields, where Night-men emptied their Carts, he obſerved a great Number of ſmall Particles of Phoſphorus therein. This Matter the Doctor immediately carried to Mr. *Boyle*; who ſet *Bilgar* the Chymiſt to work upon it: But he could obtain very little Phoſphorus from it, till another Material was added to it in Diſtillation; and then he procured Phoſphorus in ſuch Plenty, that, ſelling large Quantities at ſix Guineas the Ounce, he ſoon became rich, and left *England*. The Matter which thus fixes and increaſes the Phoſphorus, we apprehend to be Alum; which is itſelf not only prepared from Urine, but appears to afford the ſame kind of Acid that Phoſphorus yields by burning. For, upon its Analyſis, Phoſphorus appears to be a Compoſition of a ſtrong acid and an inflammable Matter, exactly in the manner of common Brimſtone; whence it may not improperly be called an animal Sulphur. Accordingly, like common Brimſtone, it will burn under a Glaſs-bell, and afford Flowers, that become an acid Liquor, like *Oleum Sulphuris per Campanam*, by attracting the Moiſture of the Air.

And in this manner it has been uſed, ſo as to produce extraordinary Changes upon Metals, eſpecially in the philoſophical View; the Acid itſelf, even without Heat, proving a Menſtruum to perhaps all the Metals. But when this Acid is driven into the Pores of the Metal, by the Action of the Flame in burning the Phoſphorus, it ſeems productive of much greater Effects; as is known to thoſe acquainted with the ſublimer Metallurgy. This Phoſphorus, of all the kinds hitherto diſcovered, ſeems the moſt uſeful.

This Phoſphorus has been ſeveral Ways diſguiſed, ſo as to make it appear under various Forms; ſometimes as a Solid, ſometimes as a Liquid, ſometimes as an Ointment, and ſometimes as a running Mercury. There are, alſo, others of different Kinds; of which we ſhall only mention two, diſcovered by M. *Homberg*: The firſt is that uſually called the *black Phoſphorus*, now commonly prepared with Alum and Wheat-flour, by taking four or five Parts of Alum, to one of Wheat-flour, and calcining them together to a brown or blackiſh Maſs; which being powder'd, and put into a Phial, looſely ſtopped with Paper, and ſet in a Sand-heat, ſo as to continue glowing hot for ſome time; then removing the Whole from the Fire, and ſuffering it to cool gradually, and at laſt ſtopping the Bottle cloſe. A little of this Powder, being poured out of the Bottle, and expoſed to the open Air, immediately takes Fire, and appears like a glowing Coal. But the Powder muſt be freſh made, to have a ſtrong Effect; for the Sun's Rays, or the Moiſture of the Air, being gradually admitted to it, deſtroy its Virtue; whence it ought to be kept in a dark and dry Place. 'Tis remarkable of this Phoſphorus, that it may be made almoſt from any animal or vegetable Subſtance, inſtead of Wheat-flour; but that no Salt whatever can be ſubſtituted inſtead of Alum.

M. *Homberg*'s other Phoſphorus is made of one Part Sal Ammoniac, and two Parts Lime ſlaked in the Air: Theſe being mixed well together, a Crucible is to be filled with them, and ſet in a ſmall Fire of Fuſion; where, as ſoon as the Crucible becomes red-hot, the Mixture will melt, and ſhould be ſtirred with an Iron Rod, to prevent its running over. When the Matter is entirely fuſed, it may be poured into a Braſs Mortar; and, when cold, it will appear of a grey Colour, and almoſt as if it were vitrified. If now it be ſtruck upon with any hard Body, it appears as on Fire, in the whole Extent of the Stroke: But, the Matter being brittle, it may be proper, for the Experiment's Sake, to dip little Bars of Iron, or Copper, into the melted Matter in the Crucible; for thus they will be enamel'd, as it were, with the Matter, and theſe Bars may be ſtruck upon, ſo as commodiouſly to repeat the Experiment ſeveral times before the Matter falls off. The Bars are to be kept in a dry Place, to prevent the Phoſphorus upon them from running, by the Moiſture of the Air.

Both theſe Phoſphori were diſcover'd by Accident. The firſt was obtained by ſearching for a limpid Oil, from the common ſtercoraceous Matter, that ſhould fix Quickſilver; and the ſecond by endeavouring to calcine Sal Ammoniac with Lime, ſo as to render it fuſible like Wax; which End was obtained, but not the other.

There have been no very conſiderable Uſes of theſe two Phoſphori hitherto diſcovered; but the Phoſphorus of Urine has been employed for making many curious Experiments; a few whereof we ſhall here exhibit.

1. The Light of this Phoſphorus appears greater in Vacuo, than in the open Air.

2. In hot Weather it is obſerved to dart Flaſhes of Light through the Water wherein it is contained, ſo as exactly to reſemble Lightning; which thus darts unextinguiſhed through watery Clouds and Vapours.

3. Theſe Flaſhes are not liable to kindle or burn any combuſtible Matter, in which they reſemble the harmleſs Kind of Lightning; but, in a condenſed State, this Phoſphorus burns very furiouſly, and with a moſt penetrating Fire, ſo as to melt and diſſolve Metals: In which reſpect it again reſembles the more deſtructive Kinds of Lightning, which are found to have the ſame Effects.

4. If a little Piece of this Phoſphorus be view'd through a Microſcope, the internal Parts appear in a conſtant Ebullition.

5. A little Piece of it being put into a Silver Spoon, and held over the Fire, it burſts out into a ſhining Flame, leaving a red Spot in the Spoon, of a corroſive acid Taſte; and, being diluted with Water, the Mixture makes a Conflict with Oil of Tartar *per Deliquium*.

6. If a little of it be ground in a Glaſs Mortar, with twenty times its own Weight of Nitre, it does not take Flame, but only diſperſe a ſhining Property through the Body of the Nitre; but, if ground in the ſame manner, with Iron Filings reduced to Powder, a bright Flame immediately enſues.

7. Though this Phoſphorus appears to be a kind of Sulphur, yet it does not diſſolve in highly rectified Spirit of Wine, but communicates ſome ſulphureous Parts thereto: For if this Spirit be poured to Water in the Dark, it yields a faint Degree of Light.

8. The Nature of this Phoſphorus is conſiderably changed, by being long digeſted with Alcohol; for thus it becomes a kind of white tranſparent Oil, that does not coagulate without an extreme Degree of Cold, nor afford any manner of Light; and, when freſh Spirit of Wine is pour'd thereon, it does not, like other Oils, mix therewith, nor diſſolve therein.

9. If this Phoſphorus be ſeparated from the Spirit of Wine, wherewith it was digeſted, and be afterwards well waſhed in common Water, it, by degrees, recovers its former Conſiſtence, and coagulates into a tranſparent Matter whiter than before; but neither affords ſo much Light, nor recovers its primitive ſhining Virtue, nor its yellow Colour.

10. The Spirit of Wine ſo ſeparated becomes yellowiſh, and ſmells ſtrong of the Phoſphorus; though it ſhines not, except when poured upon Water.

11. This Phoſphorus, being mixed with a large Quantity of Pomatum, makes, as well as with Camphire, and the Oil of Cloves, a ſhining Unguent, that may be rubbed on the Hands and Face, without Danger of burning, ſo as to render them luminous in the Dark.

12. If a Piece of Paper, or Linen, be dipt at one End in Spirit of Wine, and a Bit of Phoſphorus be cruſhed on the other End that remains dry, the Spirit will be fired by the Phoſphorus, without immediate Contact. But the ſame thing will not happen, if the Paper were dipt in Oil of Turpentine, nor if a Bit of Phoſphorus were rubbed upon the End dipt in the Spirit of Wine; only, when the Spirit is entirely evaporated, the Phoſphorus will burn, though with Difficulty, and ſlowly.

There are many of theſe odd kind of Experiments, that might be made with Phoſphorus; which is a Subſtance that ſeems in Chymiſtry to be much ſuch a thing, as the Load-ſtone in Natural Philoſophy; and its Effects almoſt as odd, and difficult to be explain'd, for want of knowing the latent Properties of Bodies.

Axioms.

We learn from the preceding Experiments, that the Phoſphorus of Urine is applicable to many extraordinary Purpoſes, particularly

particularly to the introducing of uncommon Changes in metalline Bodies.

That, as moſt Diſcoveries of chymical Exploſions and Phoſphori were accidental, greater Things may be expected from a ſagacious Experience, and by a further Diſcovery of Cauſes and Axioms.

That the Phoſphorus of Urine may be made in large Quantities, and with ſmall Expence; ſo as to afford deſirable Opportunities for the farther Improvement of Chymiſtry and Metallurgy.

PHOTEL, by ſome called *Ficus Pharaonis Thevet*, is a Tree nearly reſembling the *Banana-tree*, growing in the Kingdom of *Catay*, according to *C. Bauhine*; which is all we know of it.

PHOXINOS SQUAMOSUS. The Name of a River-fiſh, about half a Foot long, pretty thick, and covered with yellow and blue Scales, with a red Tail. It is eſteem'd aperitive. *Lemery des Drogues.*

PHOXOS, φοξός. One with an acuminated or faſtigiated Head, that is, ſharpen'd towards the Top, the Eminences either of the Forehead or Occiput, or both, being depreſſed, or one or both of thoſe Parts beyond meaſure prominent. Or, as *Galen* expreſſes it *Com.* 1. in 6 *Epid.* ἡ φοξὴ κεφαλὴ, &c. "An acuminated Head, with one or both the Eminences "[of the Forehead and Occiput] indecently prominent, or "having one Eminence, and wanting the other:" And again, "Acute Heads want either the Eminence of the Forehead, or "Occiput; or elſe have it produced beyond a juſt Degree." But *Phoxoi* are properly thoſe who have the Top of their Head very much faſtigiated and turbinated, and conſequently deformed. *Therſites* is deſcribed by *Homer* with ſuch a Head. Φοξὸς, in *Heſychius* and *Erotian*, is expounded by ὀξυκέφαλος, "ſharp-"headed." The Word occurs twice 6 *Epid.*

PHRAGMITES, φραγμίτης. A Name in *Dioſcorides*, for the common *Arundo*.

PHRAGMOS, φραγμὸς, from φράσσω, to incloſe as with an Hedge. An Anatomical Term for the double Series, or Cage, of Teeth.

PHRASIUM *viride*. Flos Æris. *Rulandus*.

PHRENES, φρένες, was the Name by which *Hippocrates*, and the antient Phyſicians, called the *Diaphragma*.

PHRENESIS, PHRENETIASIS. The ſame as PHRENITIS; which ſee.

PHRENITICI NERVI. The Nerves belonging to the Diaphragm. See PHRENES.

PHRENITIS, φρενῖτις, from φρὴν, the Mind. A Phrenſy.

There is no Inflammation, or particular Fever, of ſo great Importance in Medicine, as that which is lodged in the Brain, the nobleſt of all the Parts; and not only totally deſtroys the Uſe of Reaſon, but, alſo, induces a ſudden Danger of Death, and is, by the *Greeks*, call'd *Phrenitis*. Now this Diſorder is an acute inflammatory Fever, ariſing from too great a Congeſtion of Blood, and its interrupted Circulation, eſpecially thro' the moſt minute Arteries of the Membranes of the Brain; and accompanied with intenſe Heat, a Delirium, and Danger of Death.

The Signs of an approaching Phrenitis are, by *Alexander Trallian*, in *Lib.* 1. *Cap.* 13. accurately and compendiouſly deſcribed in the following manner: "An approaching Phrenitis, "ſays he, is preceded by intenſe and continual Watchings; or, if "the Patients ſleep, their Reſt is troubled and interrupted. They, "alſo, ſtart, and are afflicted with terrible Dreams. They ſoon "forget what is ſaid to them; and if, at any time, they re-"turn an Anſwer to a Queſtion, they appear more fierce and "angry, than juſt before they ſeem'd to be. Their Pulſe is "hard and ſmall, whilſt they are frequently afflicted with a Pain "of the Occiput. When the Diſorder increaſes, their Eyes be-"come more fix'd and red; Tears, at the ſame time, flowing "from both of them." But the Signs and Symptoms of a preſent Phrenitis are by none of the Antients ſo well ſpecified and characterized, as by *Cœlius Aurelianus*, in *Lib.* 1. *Cap.* 2. in the following manner: "In a Phrenitis, the Patient is afflicted "with an acute Fever; his Pulſe is hardly perceptible on the "Surface of the Body; or, if it is, it is low and tenſe; his Face "is inflated and full; the Blood drops from his Noſtrils; he is "afflicted with continual Watchings; or, if he ſleeps, his Reſt is "diſturb'd; he is ſeized with a kind of turbulent Madneſs, a "preternatural Solicitude of Mind, and a Privation of Reaſon; "he frequently changes his Poſture in Bed, and his Head is in a "continual Commotion. He is ſometimes chearful, without "any apparent Cauſe; his Eyes are red; he weeps gently, and "toſſes his Arms about him, but has no Pain in his Head. His "Joints are cold, but without any Tremor. His Urine is co-"pious, yellow, aqueous, thin, and diſcharged by little and little. "Some phrenitic Patients are afflicted with a Noiſe in their "Heads, a Ringing of their Ears, and an inceſſant Head-ach. "Their Looks are, alſo, fix'd and ſtern, and their Eyes frequently "wink."

All theſe injured Functions of the Body, accompanying a Phrenitis, ariſe from too copious and impetuous a Conveyance of Blood to the Head; its interrupted Circulation thro' the minute Veſſels of the Brain; its Stagnation; and its quick Conveyance thro' other unuſual Ways. Hence Diſtentions of the Veſſels of the Brain and Face happen; a ſerous Humour is ſecreted, and every-where obſtructs the Veſſels. The Brain is totally diſturb'd, and eſpecially in thoſe Functions which are ſubſervient to the Uſe of Reaſon; for *Hippocrates*, in his Book *de Flatibus*, and in many other Parts, juſtly obſerves, that Prudence and Reaſon depend upon a laudable State of the Blood in the Brain; or, in the modern Stile, upon its equable Circulation thro' it; ſo that, when this is diſturb'd, Prudence and Reaſon are deſtroy'd. And that the true Seat of a Phrenitis is in the Brain, is ſufficiently evinced by diſſecting thoſe who have died of that Diſorder; in whom, not only the Veſſels of the Dura Mater, with its Sinuſes, but, alſo, thoſe of the Pia Mater, are infarcted with a thick and coagulated Blood; whilſt theſe Membranes themſelves are ſo dry and parch'd, that the Pia Mater can be eaſily ſeparated from the cortical Subſtance of the Brain. Beſides, the medullary Subſtance of the Brain appears cover'd with a large Quantity of a ſerous Humour. Theſe Circumſtances are confirm'd, in many Inſtances, by *Blancard*, in *Anatom. Pract. Obſ.* 3. *Schenckius*, *Lib.* 1. and *M. N. C. Decad.* 2. *An.* 5. *Obſ.* 62.

Among the antecedent Cauſes of a Phrenitis, *Cœlius Aurelianus*, in the Part before quoted, juſtly reckons, drinking Wine too copiouſly; Watchings; remaining long expoſed to the Sun; a Mind naturally giddy and inconſtant; Anger; a Weakneſs of the Head, brought on by Study; and Youth. Now 'tis certain, that all thoſe Things diſpoſe to a Phrenitis, which render the Head weak and infirm; in conſequence of which, there may eaſily happen a Stagnation of the Blood, and a too long Continuance of the Humours in its Veſſels. Thoſe Things, alſo, diſpoſe to a Phrenitis, which forcibly convey the Blood from the inferior Parts to the Head. Hence 'tis confirm'd by practical Obſervations, that a Phrenitis, and delirious Fevers, are highly incident to thoſe afflicted with long Grief, or Care, who fatigue their Minds by profound Meditation and Study; to thoſe who are ſtrong and vigorous; who are of melancholic and choleric Conſtitutions; who are often under the Influences of Anger or Hatred; who are rack'd by violent Paſſions; who are afflicted with Watchings and Inquietudes; who ſurfeit themſelves with ſtrongly hopt Malt-liquors; who are addicted to Wine and Women; to thoſe who lead a ſedentary Life, free from Motion and Exerciſe; and to ſuch as, in conſequence of a bad and prepoſterous Regimen, contain a large Quantity of impure Blood in their Veins. 'Tis, alſo, certain from Experience, that a Ceſſation, or ſpeedy Suppreſſion, of an uſual hæmorrhoidal Diſcharge, of the Menſes, or Lochia, in Child-bed Women, eſpecially when ſuch Patients are coſtive, lay a Foundation for a Phrenitis. For, in ſuch a State, in conſequence of the Stagnation of Blood in the abdominal Viſcera, ſpaſmodic Strictures are excited in the nervous Parts, which render the Circulation of the Blood unequal, and convey it impetuouſly to other Parts, where it is too copiouſly congeſted. A Phrenitis is, alſo, frequently induced by external Violence. This eaſily happens in Wounds and Contuſions of the Head, eſpecially in plethoric and cacochymic Habits; unleſs ſuch a Misfortune is ſpeedily prevented by Veneſection and Diſcutients. In a Phrenitis, ariſing from ſuch a Cauſe, the Event is generally fatal, according to *Hippocrates*, in *Sect.* 7. *Aph.* 14.

A Phrenitis is juſtly to be diſtinguiſh'd into that of the idiopathic, and that of the ſymptomatic Kind. In both of theſe, there is, indeed, an acute Fever, but with this Difference, that, in the latter, it precedes; whereas, in the former, it is the inſeparable Concomitant of the Diſorder. An idiopathic Phrenitis is rarely found in temperate Climates, but occurs more frequently in hot, dry, and ſoutherly Countries; for which Reaſon the antient *Greek* Phyſicians, eſpecially *Aetius*, and *Alexander Trallian*, have, in their Works, treated accurately and copiouſly concerning a Phrenitis. There are, however, in temperate Climes, Inſtances of a Phrenitis ariſing, without any previous Diſorder; eſpecially from Surfeits, continual Anger, and a Weakneſs of the Brain, produced by profound and continual Meditation, Watchings, and Fatigue; in ſanguineous, or choleric and melancholic Perſons; thoſe addicted to a ſedentary Life; hypochondriacal Perſons; and thoſe ſubject to the Hæmorrhoids, eſpecially if that Evacuation is imprudently ſtopt. But *Willis*, in *Pathol. Cerebri, Cap.* 10. juſtly informs us, from his own Experience, that unleſs this Species of Phrenitis is ſoon removed by proper Medicines, it degenerates into a Mania, or a furious Delirium. An idiopathic Phrenitis, which degenerates into a Mania, alſo, frequently happens after burning, purple, exanthematous, and catarrhous Fevers, improperly treated by a too hot Regimen; by volatile Medicines, which throw the Blood into too violent Commotions; by Opiates; by too forcible Repellents; by Refrigerants; and unſeaſonable Veneſections. And this Diſorder happens the more infallibly and violently, when the Patient is much and frequently ſubject to Anger.

A ſymptomatic Phrenitis is much more frequent in our Country; for it frequently happens, and proves mortal, in the Height

of malignant Fevers, acute exanthematous Fevers, petechial Fevers, the Small-pox, malignant catarrhous Fevers, eſpecially ſuch as rage in Camps, and moſt of all in the *Hungarian* Fever, particularly when the Diſorders are ill treated; for in theſe Diſeaſes a Phrenitis, of the ſymptomatic Kind, generally appears about the critical Days, and is attended with Rigor and Tremor of the Joints, a Tenſion of the Præcordia, a Refrigeration of the Extremities, and a Thinneſs of the Urine, which is diſcharged either in too ſmall, or in too large a Quantity. But becauſe, in conſequence of the preceding Diſeaſe, and the continual Watchings, the Strength is almoſt totally loſt, and the Tone of the Veſſels diſtributed through the Membranes of the Brain too much weaken'd, irreſolvable Stagnations of Blood happen in them, which generally prove mortal on the third Day.

But, though a Phrenitis frequently degenerates into a Mania, according to the Antients, eſpecially *Hippocrates*, *Cœlius Aurelianus*, and *Aretæus*, who for this Reaſon join, or rather confound, the one with the other, there is yet a great Difference between them; for in a Phrenitis there is always a Fever, *accompanied with a quick, hard, and ſmall Pulſe. There is*, alſo, a Delirium, not abſolutely intermitting, but ſometimes remitting, at which time every thing which happened under the Delirium, is forgotten. But a Mania is a chronical Diſorder without an acute Fever, though accompanied with a preternaturally hard and unequal Pulſe, which is ſometimes ſmall, and at others large and quick. A Mania has, alſo, its lucid Intervals, and is generally accompanied with great Pride, Anger, and Hatred to the Patient's Friends and Neighbours. And, when the Paroxyſm ceaſes, the Maniacs have generally a ſurpriſing Remembrance of what happened under it. A Phrenitis is, alſo, different from that ſlight Alienation of Mind, which is frequently obſerved in acute Fevers, before the critical Expulſion of the exanthematous Matter; for ſuch a ſlight Alienation of Mind goes more eaſily off, nor is it accompanied with thin and watery Urine, nor a Rigor and Refrigeration of the external Parts: Sometimes, alſo, after the Decline of an acute Fever, we obſerve, for ſome Days or Weeks, a certain Fooliſhneſs, or Inconſtancy of Mind, which is different from a Phrenitis, ariſes from the Loſs of the Strength, and Weakneſs of the Brain produced by the Diſeaſe; and, as the Strength returns, it either ſpontaneouſly ceaſes, or is eaſily removed by proper Medicines.

The CURE.

Since the violent and terrible Symptoms, which accompany a Phrenitis, depend upon an Inflammation of the Meninges, which is their immediate Cauſe, the principal Intention of the Phyſician ought to be, either to prevent, or remove, ſuch a Misfortune. But as the Cauſe of this Inflammation is a Stagnation of the Blood in the Veſſels of the Meninges, and a ſudden Conveyance of it to other Parts accompanied with Pain, a ſpaſmodic Tenſion, and Heat, Reaſon informs us, that thoſe Medicines are, of all others, the moſt proper, which check the fierce Impetus of the Blood to the Head, derive the congeſted Humours from it, diſengage and diſcuſs the ſtagnant Blood, and relax the ſpaſmodically conſtricted Meninges.

Now, both in preventing and curing a Phrenitis, both antient and modern Phyſicians unanimouſly recommend Veneſection, as near as poſſible to the Part affected. *Trallian*, and the *Arabians*, in a Phrenitis, often open'd the Jugular Vein; but this laudable Practice is too much neglected, ſince 'tis certain from Experience, that in all Diſorders of the Head, ariſing from a Congeſtion and Stagnation of the Blood, opening this Vein is preferable to an Inciſion of any other, becauſe both the external and internal Jugular Veins derive the Blood from the Carotid and Vertebral Arteries. Nor is the Inciſion of this Vein either ſo difficult, or dangerous, as 'tis commonly thought, ſince by applying a Ligature about the Neck, in ſuch a manner, as to render the Vein turgid, it may be eaſily performed. Beſides, opening the Sublingual Veins is a Practice highly eſteemed by Phyſicians, not only in a Phrenitis, but, alſo, in other Diſorders of the Head. Thus, *Ammannus*, in *Pareus*, informs us, that in the Year 1664. among all the Soldiers who return'd from the *Hungarian* Expedition, and labour'd under the *Hungarian* Fever in the Hoſpitals, none of thoſe died, who, in due Time, had the Venæ Raninæ open'd, whilſt thoſe were carried off by the Diſorder, who had not that Advantage. I have, alſo, known the Opening of theſe Veins highly uſeful in acute Fevers, for preventing a Delirium, when performed on the ſixth or ſeventh Day, whilſt the Patient's Reaſon yet remained. But, if a Delirium is already preſent, it is with Difficulty performed. Beſides, if the Inciſion is large, a terrible and fatal Hæmorrhage is to be dreaded, in conſequence of the Impetus of the Blood to the Head. On the contrary, from too ſmall an Orifice, but little Blood is evacuated; and, a Space being there procured, the Blood is rather more ſolicited to the Brain. Others, after the proper Application of a Ligature to the Neck, recommend opening the Frontal Vein; and *Trallian* informs us, that by this means he cured a Perſon afflicted with a violent Phrenitis. Some prefer Arteriotomy in the Temples. Thus *Panarolus*, in *Pentec.* 1. *Obſ.* 19. informs us, that in a violent Phrenitis he found this Practice ſo ſucceſsful, that the Patients were immediately relieved by it. In a Phrenitis, *Cœlius Aurelianus*, after ſhaving the Head, orders the Whole of it to be ſcarified. But the *Egyptian* Method of ſcarifying the Noſtrils is far more commendable; and, if a proper Inſtrument for this Purpoſe cannot be had, the End may be obtained by thruſting a Straw, or any other thing of the like Nature, up the Noſtrils, in ſuch a manner, as to procure an Hæmorrhage, which I have often ſeen productive of immediate Relief. Theſe Methods of Veneſection in the Parts contiguous to that affected are to be uſed not only in the idiopathic, but, alſo, in the ſymptomatic Phrenitis. But, when, from a Retention or Suppreſſion of the Menſes, or Lochia, a Phrenitis is dreaded, a Vein is quickly to be open'd in the Foot, *and a large Quantity of Blood muſt be taken away. If* from any Fault, or Interception, of the Hæmorrhoids, a Delirium is dreaded, the beſt and moſt proper Method of affording Relief is, to open the hæmorrhoidal Veins by the Application of Leeches.

After a due Evacuation of Blood, the Body is to be render'd ſoluble; ſince, when the Patient is coſtive, the Afflux of the Humours is directed to the ſuperior Parts, whereas, when his Body is ſufficiently ſoluble, they are derived to the inferior Parts. *Hippocrates*, in *Lib.* 3. *de Morbis*, *Sect.* 9. juſtly adviſes, that, in the Cure of a Phrenitis, the Body is to be rendered ſoluble by moiſtening Potions, which relax the ſpaſmodically conſtricted Coats of the Inteſtines, becauſe Spaſms of the Primæ Viæ are frequently the Cauſes of Deliriums. But, for anſwering this Intention, I, above all other Medicines, recommend Potions prepared with Manna. Thus,

> Take four Ounces of Manna; diſſolve it in a Pint of Whey; and add one Dram of Cream of Tartar, half a Dram of Nitre, and one Ounce of the Oil of ſweet Almonds.

Baglivi, in *Prax. Lib.* 1. recommends the Pulvis Cornachini in the following manner: "Since, ſays he, it has often "been obſerved, that Deliriums are terminated by Fluxes, I "have therefore, in Imitation of the Method pointed out by "Nature, found the Pulvis Cornachini effectual for this Purpoſe; drinking after it diluting Decoctions prepared of Barley, Sal Prunellæ, and other Ingredients calculated for ſweetening the Humours, eſpecially if there is a preternatural Heat "of the Viſcera, and an internal Inflammation." But, if the Caſe calls for ſpeedy Relief, the Body is to be rendered ſoluble by a lenient, paregoric, and domeſtic Clyſter.

Among the internal Medicines againſt a Phrenitis, we muſt, alſo, claſs diluent, demulcent, and moiſtening Potions drank in large Quantities, if the Patient is very thirſty, which, according to *Aretæus*, rarely happens. But, among all other Drinks, none is more proper and expedient than Whey, either acidulated with Citron-juice, and prepared with Julap of Roſes, or edulcorated with Syrup of white Poppies. In a Quart of this Whey, we may, with Advantage, diſſolve a Dram of depurated Nitre, or Sal Prunellæ. Phrenitic Patients, alſo, with Advantage, uſe Emulſions prepared of Decoctions of Barley, Shavings of Hartſhorn, and the Four cold Seeds, with Julap of Roſes; eſpecially if to a Quart of ſuch an Emulſion two Scruples of Nitre are added. Ptiſans, and Milk mixed with the *Selteran* or *Antonian* Waters, are very proper for thoſe who labour under this Diſorder; for the more copiouſly theſe Liquors are drank, the more efficacious they are in diluting the Humours, relaxing the conſtricted Veſſels, removing Obſtructions, and extinguiſhing the Heat. The diaphoretic and diſcutient Mixture, deſcribed under the Article ANGINA, is, alſo, of ſingular Service, not only in a Phrenitis, but, alſo, in all other Inflammations.

Among the external Means of freeing the Head from the Afflux of Humours, we may juſtly reckon bathing the Feet, or wrapping them up in a moiſt and warm Linen Cloth, or, which is ſtill better, temperate Baths of freſh Water. The remarkable Uſe of theſe is not only confirmed by daily Experience, but, alſo, ſupported by the beſt Authorities. Thus *Alexander Trallian*, in *Lib.* 1. tells us, "That thoſe who have "ſufficient Evacuations made, whilſt the Quantity of the Humours is prejudicial to no Part of the Body, but are afflicted with a Drineſs of the Body, and an obſtinate Watching, "ought to bathe and anoint; and, even if the Patient is feveriſh, it will do him no Harm to bathe in this manner, eſpecially if the Bath is tepid, and neither the Air, nor the "Bathing-tub, too hot. But thoſe who do not bathe for Fear

" of the Fever, are greatly miſtaken, ſince, by abſtaining from " the Bath, the Patients have their Watching, and Perturbation " of Mind, increaſed. Such Patients are, therefore, to be " bathed in the manner directed, ſince by this means they are " reſtored to a due Temperament, and freed from their De- " lirium, and the Diſorder which excited the Fever." The Antients, alſo, and eſpecially *Alexander Trallian*, and *Aretæus*, after Veneſection and Purgation, fomented the Head with an *Oxyrrhodinum* of Vinegar of Roſes, leſt, as they ſaid, the Head ſhould attract a large Quantity of Humours, and be filled with them. Nor is this Piece of Practice to be contemn'd. In all Deliriums, however, I with great Succeſs order the Head to be ſhaved, and fomented with the following temperate Epithem :

Take of Roſe-vinegar, two Ounces; of the Spirit of Roſes, in which ten Grains of Camphire are diſſolv'd, two Drams; of pure Nitre, two Scruples; and of the Oil of Roſewood, twenty Drops. Mix all together for Uſe.

This Method of curing not only an idiopathic, but, alſo, a ſymptomatic Phrenitis, and eſpecially that inveterate Species of the Diſorder, which ſeems to degenerate into a Mania, is founded upon my own Experience; nor can any other Meaſures be well invented, or found out: But the Uſe of theſe muſt be for a conſiderable time perſiſted in. *Alexander Trallian*, in *Lib.* 1. gives an accurate Account of the Regimen proper for phrenitic Patients, in the following manner: " The Place, ſays he, " in which the Patient lives, is to be duly conſider'd, ſince he " ought to be expoſed to an Air, which is neither too thick, too " moiſt, nor too cold, leſt the Pores of his Head ſhould be by " that means obſtructed, or a Repletion of it produced. But " let the Atmoſphere be temperate, that by its laudable Qua- " lity the animal Spirits may be revived and relaxed. Let " his Chamber be rather light than dark, that by this means " he may gradually arrive at the Perception and Remembrance " of ſuch Objects as he was formerly accuſtomed to. For " this Reaſon, let ſome intimate Acquaintances attend him, " and reprove him for what he does, and exert a due Autho- " rity over him. Nor ought any Servant or Friend, on whoſe " account he is ſometimes grieved, or at whom he is angry, " to enter the Room; for this generally irritates the phrenitic " Patient, and lays a Foundation for his greater and more " manifeſt Perturbation. Nor ought great Numbers of his " Friends and Acquaintances to enter his Chamber, ſince " they not only form a Croud about him, but, alſo, render " the Air thick by their Breaths. He is not to be re- " moved in Bed with Violence, but gently, leſt, in conſe- " quence of his Weakneſs, he ſhould be hurt; for this, above " all things, irritates the Patient, and prevents Sleep. Let " the By-ſtanders hold all his Limbs without Violence, and " gently rub them, eſpecially the inferior Members: And his " Limbs are to be ſecured with Cords, principally when his " Convulſions ſeize him; for this ſolicits the Matter to the " inferior Parts, and allays the Convulſions. It is, alſo, ex- " pedient, when the inferior Parts are rub'd, to foment " them, and apply Ligatures to them in ſuch a manner, that " the Matter by Fomentation and Friction convey'd to them, " may be derived ſtill farther downwards."

With reſpect to Veneſection, we are to obſerve, that phrenitic Patients often abſolutely refuſe to ſubmit to it: In which Caſe, I know no more expeditious and effectual Method of Relief, than ſuddenly and unexpectedly to thruſt a Quill or Straw into the Noſtrils; by which means a large Quantity of Blood is ſometimes commodiouſly evacuated. But, if the Phrenitis is idiopathic and chronical, we are not to open the Frontal Vein, eſpecially in plethoric Habits, till we have previouſly opened a Vein either in the Arm or Foot, leſt the Impetus of the Blood to the Head ſhould be augmented. Neither, in performing this Operation, are we to uſe too ſharp an Inſtrument, leſt, paſſing it through the Vein, we ſhould wound the Pericranium.

A Phrenitis ariſing from any Diſorder of the Menſes and Hæmorrhoids, and the violent Spaſms by that means produced, is beſt and moſt commodiouſly alleviated by Baths, drinking Mineral Waters, and the Application of Leeches to the Veins of the Arms, uſing, at the ſame time, a proper Regimen and Diet; for I have known a long-continued Phrenitis happily removed by the Eruption of the menſtrual or hæmorrhoidal Diſcharge. But when a Phrenitis does not ſo much proceed from a Redundance of Blood congeſted in the Veſſels of the Brain, as from a ſubtile, acrid, and virulent Matter, which is either repel'd from the Surface of the Body, as in exanthematous Diſorders, or, being, by too hot and volatile Medicines, too much exalted, is firmly impacted in the Dura Mater, which is a nervous Membrane, excites Spaſms, hinders the free Circulation of the Blood, and intercepts its Return to the Heart, beſides opening the Veins contiguous to the Head, we are to ſhave the Head, and apply to it the warm Parts of Animals juſt killed, ſuch as the Lungs, the Liver, and the Omentum, which, becoming cold, are to be immerſed in warm Water, in order to heat them again.

In *Poland*, a melancholic and maniacal Phrenitis is very frequent, in conſequence of a latent *Plica*; and, when the latter appears, the former ceaſes. For this Reaſon, 'tis expedient to ſolicit and forward the Egreſs of the Plica; for which Purpoſe, the Inhabitants of that Country generally uſe a Decoction of two Handfuls of Club-moſs, prepared with two Quarts of Water. When with this Decoction they waſh their Head and Hairs twice a Day, the Plica generally appears in a Week's time, and removes the Delirium. When in a Plica Polonica the Hairs are cut off, there frequently enſues a violent Head-ach, which is ſucceeded by a Phrenitis, a Fever, and ſometimes a Mania; which, however, are ſoon removed by uſing the Decoction of Club-moſs, or the Liniment of Club-moſs, deſcribed in *M. N. C. Dec.* 1. *An.* 2. *Obſ.* 54. by which means the Plica is recalled.

But as in all Inflammations, ſo, alſo, in a Phrenitis, we are carefully to abſtain from acrid Subſtances, and ſuch as put the Humours into a Commotion; from ſpirituous Liquors; from violent Exerciſe, both of Body and Mind; and from all Aliments capable of putting the Blood into a preternatural Motion. The Patients are by no means to be irritated and provoked to Anger: For which Reaſon, no Perſon who has injured them, or whom they cannot endure, is to be admitted to them. Opiates and Narcotics are by no means to be uſed in a Phrenitis, eſpecially where the Strength is already impaired; for 'tis certain from Experience, that, in Fevers, Deliriums are ſometimes brought on by Opiates and Narcotics. Hence, *Alexander Trallian*, in *Lib.* 1. juſtly adviſes, " That in a " Phrenitis, where the Strength is low, we are to exhibit " nothing which induces Sleep, and a Torpor; ſince, by ſuch " Medicines, a great Injury is done to the Patient." Veſicatories, alſo, by ſome much uſed in a Phrenitis, are to be condemned; for the Cantharides, by their acrid Stimulus, irritate the already tenſe and ſpaſmodically conſtricted Fibres; by which means they increaſe the Delirium, and bring on Convulſions, as *Baglivi*, in *Lib.* 1. *Prax.* informs us, in the following manner: " In *Rome*, ſays he, I obſerve more Men killed than " cured by Veſicatories, which, however, are more benefi- " cial, and leſs dangerous, to Women:" And, a little after, he ſubjoins, " If Veſicatories are applied to Patients labouring " under a Delirium, accompanied with an acute Fever, a Dri- " neſs of the Tongue, and the Signs of a violent Inflamma- " tion of the Viſcera, all the Symptoms become worſe, and " the Patient, for the moſt part, dies of Convulſions." *Frederic Hoffman.*

When a violent and perpetual Delirium ariſes from a primary Diſorder of the Brain, accompanied with a continual Fever, it is called *A true Phrenitis.*

When a Phrenitis ariſes from a Diſorder communicated to the Brain from ſome other Parts, in Fevers and Inflammations, it is called *A ſymptomatic Phrenitis*, a Diſorder which correſponds to the *Greek* παραφροσύνη, and the *Latin Deſipientia.*

A true Phrenitis is preceded by Heat; a violent internal and inflammatory Pain of the Head; a Redundance of Blood; an inflammatory Diſpoſition; a Redneſs of the Eyes and Face; turbulent Sleeps; a ſlight Degree of Folly; Youth; the Uſe of hot Subſtances; remaining in the Sun; Haughtineſs, or Fierceneſs; ſudden Forgetfulneſs; a Drineſs of all the Parts; and eſpecially of the Brain; and picking the Knaps of the Bedcloaths.

A ſymptomatic Phrenitis is preceded by almoſt every acute Diſeaſe, accompanied with a Fever; as a Pain of the Side, which is not pleuritic, but accompanied with a ſlight Perturbation of Mind, and Inflammation of the Pleura, Lungs, and Diaphragm, which is a very bad Sign: Such an Inflammation is prognoſticated by a Blackneſs of the Tongue, a Suppreſſion or Whiteneſs of the Fæces, and a Retention of the Urine, which Symptoms never fail to prove mortal: A thin, pale, and ill-colour'd Urine; a Want of Thirſt; Redneſs; Urine with black Matter ſuſpended in it; and Watchings; are Signs of an approaching Inflammation of the Head.

Both a true and ſymptomatic Phrenitis, have the following Symptoms:

1. A Depravation, not only of the ſenſible Ideas, but, alſo, of the internal Senſes, of Reaſon, and of the Affections of the Mind.

2. An increaſed violent and reſtleſs Fierceneſs, or often turbulent Sleep.

3. An hard Pulſe, and a rare and large Reſpiration.

4. A Countenance, for the moſt part, highly red, ſtern and ghaſtly; fierce and protuberant Eyes; and a ſlight Hæmorrhage of the Noſe.

As for the Prognoſtic, a true Phrenitis generally carries off the Patient on the third, fourth, or ſeventh Day, which it rarely ſurpaſſes; and when it does, and happens to be violent, it degenerates into a Mania, or, when riſing ſomewhat higher, it becomes intolerable. It, alſo, often terminates in a Lethargy, a Coma, and a Catoche.

An æruginous Vomiting, in conſequence of an inflamed Brain; a frequent and indecent Spitting; a Tremor; the Fæces and Urine intercepted, or white; crude Urine; Convulſions; catching at flying Flakes; muddy Eyes; a Gnaſhing of the Teeth; a Want of Thirſt, the general Forerunner of Convulſions; a perpetual Change of Symptoms; and the Subſiding of a tumid Ulcer; are frequent Preſages of great Danger, and of Death.

A true Phrenitis is mortal after a Peripneumony, and the Iliac Paſſion; and very bad after the Small-pox.

An Inflammation ſomewhat fixed, and a Roughneſs of the Fauces tending to the ſuperior Parts, produce a mortal Phrenitis; and the Patients labouring under it grope for Objects which have no Exiſtence, and are greatly oppreſſed.

That Phrenitis is the worſt, which prevents the Patient from ſubmitting to what is neceſſary for him.

Upon laying open the Bodies of ſuch as have died of a Phrenitis, the Meninges have been found inflamed. Gangrenes, Abſceſſes, and a Sphacelus of the Brain, are, alſo, found; or acrid and corroding Ichors are diſcovered.

From what has been ſaid, 'tis obvious, that the immediate Cauſe of a true Phrenitis is a primary Inflammation of the Pia and Dura Mater; whereas the Cauſe of a ſymptomatic Phrenitis is a like Inflammation ariſing from the Conveyance of an hot and phlogiſtic Matter to the Meninges of the Brain.

Whatever is capable of producing ſuch Inflammations, may be conſidered as immediate Cauſes of a Phrenitis.

Hence the true Diagnoſtics, both of a true and ſymptomatic Phrenitis, are to be taken.

In the Cure of a Phrenitis, the following Circumſtances ought to be adverted to:

Varices, and hæmorrhoidal Diſcharges, are beneficial to phrenitic Patients; as is, alſo, a *Diarrhœa*. A Pain of the Breaſt and Feet, or a violent Cough ſupervening, often terminate a Phrenitis; as does, alſo, an Hæmorrhage.

A true Phrenitis requires the ſpeedy Uſe of the ſtrongeſt Medicines, calculated for removing the Inflammation in the Arteries of the Brain, which are found under the Article INFLAMMATIO: Only it is to be obſerved, that Veneſection is to be copiouſly inſtituted, either making one very large Orifice, or opening, at one time, a Vein in the Foot, and the Jugular and Frontal Vein. Diluting, antiphlogiſtic, and nitrous Decoctions are copiouſly to be exhibited: Then antiphlogiſtic Purgatives are to be uſed, in Conjunction with a large Quantity of a diluting nitrous Drink. Clyſters of the like Nature, with an Addition of proper laxative Ingredients, are to be uſed: The Anus is to be fomented, and the hæmorrhoidal Veins either rubbed with Fig-leaves, or evacuated by the Application of Leeches. Gentle Collutions and Gargariſms for the Mouth are to be frequently uſed: The Noſtrils, Eyes, and Ears, are to be fomented; and the Head is to be ſhaved. If theſe Meaſures are taken without removing the Diſorder, we are to uſe Opiates, waſh the Feet, and apply gentle Epiſpaſtics and Cupping-glaſſes to the inferior Parts. The Patient is to be refreſh'd in a moderately cool Air, and held in an erect Poſture.

But if a Phrenitis is of the ſymptomatic Kind, and ariſes from ſome other inflammatory Diſorder, we are carefully to conſider, whether the Nature of this primary Diſorder will admit of the Meaſures now recommended: If not, it is to be cured by the Manner uſually appropriated to itſelf; taking care always to uſe deriving and topical Medicines. *Boerhaav. Aph.*

PHRICE, φρίκη. See HORROR.

PHRICODES *Febris*, φεβρὶς φριώδης. A Fever attended with an Horror, or Shivering, not only in the Beginning of a Fit, but during a good Part of it; of which Nature is a ſemitertian Fever. *Galen, de Diff. Febr. Lib.* 2. *Cap.* 9. The Author of the *Definitiones medicæ* deſcribes it as attended with an Heat, mixed with a Rigor, and a remarkable Lowneſs of the Pulſe, which is inſenſible to the Touch, and recedes, as it were, inwards: The Belly, in this Caſe, is tumefy'd, and a Rumbling is heard: The Tongue is extremely tumid, and irrigated with an acid Humour, as with the Saliva. *Foeſius.*

PHRONTIS, φροντὶς, properly ſignifies intenſe Cogitation, or painful Exerciſe of the Mind: But in *Hippocrates, Lib.* 1. *de Morb.* it is taken in a particular Senſe for a Diſeaſe, where he ſays, φροντὶς νόσος χαλεπή, *Phrontis is a troubleſome Diſorder*; in which, as he deſcribes it, the Patient feels, as it were, a Thorn pricking the abdominal Bowels; is extremely reſtleſs; avoids the Light and Company; is only pleaſed in Obſcurity; and is afraid of every thing: The Membrane, which ſeparates the Abdomen from the Thorax, ſwells outwards; the Patient is very fearful of being touched, and ſuffers greatly thereby: He is moleſted with terrible Dreams; and imagines that he ſees frequently frightful Objects, or dead Perſons. This Diſorder may be reduced to the Claſs of melancholy Affections. *Le Clerc. Hiſt. de la Med.*

PHRYCTE, φρυκτὴ, in *Latin*, *Fricta*, ſimply, or without its proper Subſtantive, is *Reſina Colophonia*, *black Reſin*, ſo called by way of Diſtinction from the liquid Sort, named ὑγρὰ, *Hygra:* It is called φρυκτὴ, from φρύγω, to torrefy, becauſe it is burnt, or torrefy'd, as *Dioſcorides* ſhews, *Lib.* 1. *Cap.* 93.

PHRYGANON, φρύγανον. A dry Twig, or Branch fit for Burning. *Varinus.* A Bundle of theſe dry Sticks, or *Phrygana*, is directed by *Hippocrates, Lib.* 1. *de Morb. Mul.* to be placed under the Bed of a Woman in Travail, in order to prevent its Feet from coming to the Ground, when it was let fall backwards, from the erect Poſture to which it was before raiſed. This kind of Operation was called σεισμὸς (*Seiſmos*), *Concuſſion*, and order'd to be uſed for the Promotion of Delivery in difficult Caſes.

PHRYGIUS LAPIS. Offic. Boet. 406. De Laet. 134. Matth. 1380. Aldrov. Muſ. Metall. 689. Calc. Muſ. 385. THE PHRYGIAN STONE.

The *Phrygian* Stone, ſo called, becauſe it is uſed by the Dyers in *Phrygia*, is produced in *Cappadocia*. The beſt is pale, moderately ponderous, of no ſolid Contexture, and diſtinguiſhed by white Lines, like the Cadmia: They burn it in the following manner; they firſt waſh it over with the beſt Wine, then cover it with live Coals, and blow them continually; when they perceive it has changed its Colour, and is become redder, they take it out, and extinguiſh it in the ſame Wine; they put it under the Coals a ſecond time, and do as before; and even burn it a third time, but take care, that it does not crumble away, nor paſs into Soot.

The *Phrygius Lapis*, whether crude or burnt, is an efficacious Aſtringent: It moderately cleanſes, alſo, and has an eſcharotic Virtue, and with Cerate cures Ambuſtions: It is waſh'd like the Cadmia. *Dioſcorides, Lib.* 5. *Cap.* 141.

It is good in Diſeaſes of the Eyes, and for Ulcers, and other Purpoſes. *Galen.* It is at preſent unknown in the *Engliſh* Shops. *Dale.*

PHRYMION. A Name in *Oribaſius, Collect. Medicinal. Lib.* 12. for the *Poterium* of *Dioſcorides*. See POTERIUM.

PHTHARTICOS, φθαρτικὸς, from φθείρω, to corrupt. Deleterious, deadly; an Epithet applied to Poiſons, and their Qualities. *Galen, de S. F. Lib.* 5. *Cap.* 18. It is oppoſed to ἀλεξιτήριος, *alexiterius*. See ALEXITERIA.

PHTHEINAS, φθειναὶς, from φθίω, to corrupt, ſignifies tabific: Thus φθειναὶδες αἱ νόσοι are Diſeaſes cauſing a Tabes, by a Defluxion from the Head upon the Lungs. *Lib.* περὶ ἀδένων. Again, φθειναὶδες put ſubſtantively, with the Epithet ξηραὶ (*xeræ*), ſignify dry Conſumptions, which owe their Original to Tophi, or a Concretion and Induration of Humours in the Lungs, and ſeem to be oppoſed to φθινωὶδεες (*phthinodees*); which means thoſe who are in a Conſumption, proceeding from a Suppuration, or Collection of Pus in the Lungs. See PHTHINODES.

PHTHEIRIASIS. See PHTHIRIASIS.

PHTHEIROCTONON. A Name for the Staveſacre, ſo called from φθεὶρ, a Louſe, and κτείνω, to kill, becauſe it deſtroys Lice.

PHTHINICE, φθινικὴ. *Hippocrates*, 2 *Prorrhet.* mentions a Diſeaſe called νόσος φθινικὴ, *The* Phthinic *Diſeaſe*. The near Affinity between *phthinic* and *phthiſic* has induced ſome Interpreters to believe that he there ſpeaks of a Phthiſis: But the moſt learned are convinced, that there is a Fault in the Text, and that, inſtead of φθινικὴ, we are to read φοινικὴ (*Phœnicie*), *A Diſeaſe of* Phœnicia: They found their Opinion on their meeting with the Word *Phœnicie*, in the antient Gloſſaries on *Hippocrates*, where it is added, that *By this Word is to be underſtood a Diſeaſe common in* Phœnicia, *and other Eaſtern Countries, and probably the very ſame with the Elephantiaſis*. What confirms this Explication is, that *Hippocrates*, in the ſame Place, treats of the Impetigo, Lepra, and Leuce. I ſhall only obſerve, that *Galen*, who is the Author of the Gloſſary above cited, might be miſtaken in that reſpect, ſo far only as in ſuppoſing the Diſeaſe of *Phœnicia* to be what they called the *Elephantiaſis*, whereas it is poſſible, that it might have no more than a bare Relation to it; and that, by this *Diſeaſe of* Phœnicia, *Hippocrates* might mean the Leproſy of the *Jews*, which was a Sort of Leuce, and might have ſomething in common with the Elephantiaſis, without being exactly the ſame Diſtemper. *Le Clerc, Hiſt. de la Med.*

PHTHINODES, φθινώδης. Tabid, or conſumptive. An Epithet for Diſeaſes, and Perſons labouring under ſuch Diſeaſes. In *Hippocrates*, it ſometimes ſignifies a Tendency to a Conſumption.

PHTHINOPORON, φθινόπωρον. The Autumn.

PHTHIRIASIS. The lousy Evil, from φθειρ, a Louse.

The Phthiriasis is a lousy Distemper, to which Children are particularly subject, and sometimes Adults. *Swammerdam*, in his History of the Generation of Insects, tells us, that what we commonly call the *Nit*, is the true Egg from which the Louse is hatched; this Egg requires a moist and warm Place for its Matrix, and then its Multiplication is incredible, in a short Space; and some even suggest, that, in twenty-four Hours, a Louse is not only *Abavus* but *Tritavus*, that is, not only Great Grandfather's Father, but Great Grandfather's Great Grandfather. But if they miss this kindly Repository for their Eggs, as being exposed to the cold Air but for one Day, they are kill'd before they are hatched.

There are reckon'd four Kinds of Lice which molest human Bodies. 1. The *Pediculi*, so called, says *Isidore*, because they are more troublesome by the Motion of their Feet, than their Bite. These generally breed in the Heads of Children, especially if sore or scabby, and often in those of Adults, who are slothful and nasty.

2. *Crab-lice*, so called from their Resemblance to the Crab-fish, which lodge in the Arm-pits, Eye-lids, Eye-brows, and Pudenda of grown Persons. See MORPIONES.

3. *Body-lice*, which infest the Bodies, and breed in the Cloaths, of the Slothful and the Nasty: These are of a large Size, oblong, thick, and ending with an acute Point towards the Head.

4. Those generated, according to some, under the Cuticle, being found in the Hands and Feet, of a round Form, like the small Eggs of Butterflies; some of them so minute as to escape the Sight: By their creeping under the Scarf-skin, they excite an intolerable Itching; and sometimes, bursting the Skin, they discover themselves in Clusters; but they generally keep themselves concealed: They are named by some Authors, *Acari*, *Cyrones*, and *Pedecelli*.

The Cause of their Production is, by some, ascribed to the plentiful eating of Figs. *Galen* says, that the Flesh of Vipers breeds them; but, undoubtedly, Slovenliness and Nastiness are the chief Promoters of their Propagation, as affording fit Matrices for hatching their Eggs, and, also, proper Food for their Nourishment.

The lousy Evil is best prevented by wholsome Food, keeping the Body clean, and the Head carefully combed.

When they breed in the Head, let it be well combed, and washed with the following Lixivium.

Take of Wormwood, Staves-acre, Rue, and Horehound, each an Handful; lesser Centaury, half an Handful; Oak-ashes, five Ounces: Make them into a Lixivium, with Spring-water; in which dissolve, of common Salt, two Ounces; Salt of Wormwood, one Ounce: With which let the Head be washed.

Or anoint it with the following Ointment.

Take of the Oils of bitter Almonds, Rue, and Bays, each an Ounce; the Powders of Staves-acre, and Myrrh, each two Drams; Powder of Aloes, one Dram; salted Lard, two Ounces: Mix them with a little Vinegar. Or,

Take of Hogs-lard, Oil of Bays, and black Soap, each half an Ounce; Quick-silver, extinguished with Spittle, a Scruple; Myrrh, and Aloes, each half a Dram; Staves-acre, two Scruples; *French* Soap, two Drams: Reduce them, in a Mortar, to the Form of an Ointment.

For Body-lice, the wiping the Body with Gilders Cloths is reckon'd an efficacious Remedy, on account of the Quicksilver which they contain. Or,

Take of Staves-acre, and the Powder of red Arsenic, each an Ounce; common Salt, Olive-oil, and Vinegar, each a sufficient Quantity: Mix them together. Or,

Take of Staves-acre, and Powders of Nitre, and white Hellebore, each equal Parts; Oil of bitter Almonds, a sufficient Quantity: Mix them.

Take of Wormwood, and lesser Centaury, each an Handful; Lupins, one Ounce; Staves-acre, and Birthwort, each half a Pound: Boil them in a Lixivium, to which add two Ounces of Salt.

Take of Oil of bitter Almonds, one Ounce; Oils of Rue, and Staves-acre, each half an Ounce; the Powders of lesser Centaury, Myrrh, and Aloes, each a Dram; Quick-silver, half a Dram; rancid salt Lard, two Drams: Make them, with a little Vinegar, into a Liniment.

The following Lotions and Ointments are taken from *Sennertus*.

Take of long Birthwort, Lupins, and the Leaves of the Pine and Cypress, each equal Parts: Boil them in a sufficient Quantity of Spring-water, for a Lotion for the Head.

Take of the Root of Elecampane, two Ounces; of Bryony, half an Ounce; Beet, and Mercurial Soap, each an Handful; Lupins, an Ounce; Nitre, half an Ounce: Boil them for a Lotion for the Head.

Take of the Powder of Staves-acre, three Drams; Meal of Lupins, half an Ounce; white Agaric, three Drams; native Sulphur, two Drams; of the Gall of a Bull, half an Ounce; Oil of Wormwood, enough to make them into a Liniment.

Take of Staves-acre, an Ounce; Wormwood, and Rue, each half an Ounce; Sulphur, and Nitre, each two Drams: Mix and make them into a Powder, which reduce to the Form of a Liniment, with Oil of Bays.

Much stronger is this;

Take of the Powder of the Seeds of Staves-acre, an Ounce; white Hellebore, three Drams; Quick-silver, extinguish'd with Spittle, two Drams; Hogs-lard, and Oil of Bays, each a sufficient Quantity to make them into an Ointment.

In Infants and Children the Quicksilver must be omitted, as too hazardous, since milder Medicines will answer the Intention.

All the Bitters, sour, and salt Things are here recommended, as, also, Mercury, which, by a singular Property, is said to destroy these Vermin, beyond all other Medicines; but it must be used with very great Caution. *Turner de Morbis Cutaneis.*

Ettmuller advises the Head to be wash'd with a Lixivium, in which have been boiled the Seeds of Staves-acre; and anointed with the following Ointment:

Take of the Oil of Spike, two Drams; the Oil of bitter Almonds, half an Ounce; the Ointment of Tobacco, six Drams: Mix and make them into a Liniment.

This will destroy all those Animals in one Night's time.

The Powder of the *Indian* Berries, sprinkled on the Head, infallibly destroys them. *Codrochius* (who has wrote a particular Treatise of these Animals) says, he has a thousand times experienced the Use of this Powder; and that, in small Quantities, mix'd with Hogs-lard, a boiled Apple, or the like, applied to the Head, it miraculously destroys Lice, more effectually than the Staves-acre, and more safely than Quicksilver.

To destroy the Crab-lice lodging in the Groins of Adults, the anointing the Parts with black Soap is an infallible Remedy, neither is there Occasion to seek for any other. *Turner* proposes Lac Sublimatum; but that is a Medicine not so safe to be used about the Genital Parts. See MORPIONES.

Sennertus says, that the Lousiness of the Eye-lids is no contemptible Disorder; for it occasions sharp Fluxions, and the Eyes are at last much prejudiced by it: The same Author enumerates a great many Medicines for it; but there is no Occasion to mention them here; for these and all other Sorts of Lice are easily killed by anointing with black Soap.

Those who would see more relating to this Subject, may consult the following Writers; *Mercurialis*, *Lib.* 1. *Cap.* 7. *Lusitan. Cent.* 3. *Cur.* 58. *Zwinger. Theatrum Vit. Hum. Fol.* 525. *Tulp. Obs. Lib.* 3. *Cap.* 40. *Forest. Schol. Lib.* 8. *Obs.* 15. *Cardan. Lib. de Subtilitate*, 9. *Scaliger*, *Exercitat.* 94.

PHTHIRION. The same as PHTHIROCTONON. *Blancard.*

PHTHISICUS. The same as PHTHINODES.

PHTHISIS.

Except the Heart, no Part of the human Body is so useful and necessary for the Preservation of Life, as the Lungs, the genuine Instrument of Sanguification, in which the chylous and nutritive Lymph is intimately mixed with the Blood, and assimilated to it: It is, also, by means of the Lungs we draw that vital Air, or ethereal and elastic Fluid, which communicates Strength to the solid Parts, and a due systaltic Motion to the Heart: But, as the Lungs are of more Use and Importance, than most other Parts of the human Body, so they are subject to more terrible Disorders, which we shall endeavour to account for, from their Fabric and Texture. The Lungs, then, consist of membranaceous Vesicles, which receive the Air; of Nerves, which contain an highly subtile Fluid; and of various Kinds of

Veſſels, appropriated for the Blood and Lymph; ſo that, in conſequence of ſo many ſmall Veſſels, it is not to be wondered at, if there ſhould happen frequent Congeſtions, Stagnations, and Obſtructions of the Blood in them, which lay a Foundation for various Diſorders, among which one of the moſt conſiderable is a Phthiſis, which is a Conſumption or Waſting of the Body, accompanied with a ſlow Fever, a Difficulty of Breathing, a troubleſome and continual Cough, and a copious Expectoration of corrupted and purulent Phlegm and Matter. This Diſorder ariſes from an injured State of the Lungs, by means of an Abſceſs, or a ſcirrhous or ulcerous Corruption.

There are various Species of Conſumptions accompanied with a Fever, an uneaſy Cough, and an Expectoration of peccant and corrupted Matter, which, with reſpect to their Prognoſtics and Cure, are widely different from a Phthiſis, and ought not, by the Phyſician, to be confounded with it, ſince they happen without any conſiderable Injury to the Lungs. Thus it is certain from Experience, that a Conſumption frequently ariſes from a ſimple Gonorrhœa, or nocturnal Pollutions long-continued, as we are informed by *Hippocrates* in *L.* 6. *Ep. Sect.* 8. 47. Nor is it uncommon to obſerve a Conſumption ariſing from exceſſive Venery, and a Cacochymy, or depraved State of the nutritious Juices in ſcorbutic Habits, whilſt the Texture of the Lungs is as yet ſound and entire. Almoſt the ſame thing may be obſerved in the Atrophy of Children, in which, on account of a ſcirrhous Induration of the meſaraic Glands, the Chyle cannot eaſily and freely paſs to the Blood; in conſequence of which, Nutrition is prevented; and, by this means, the ſuperior Parts are conſumed and waſted, the Belly inflated, the Patient afflicted with a ſlow Fever, a Difficulty of Breathing, a Cough, and a preternatural Solubility of Body. Nor is that Species of Conſumption always to be accounted a Phthiſis, in which there is an Extenuation of Body, a ſlow Fever, a Cough, and more or leſs ſanious Stools; for it frequently happens, that, whilſt the Compages of the Lungs is found, a Sanies is conveyed to the Breaſt from other Parts, ſuch as the Meſentery, the Uterus, and Kidneys, when labouring under an Abſceſs, or Ulcer. A Phthiſis is, alſo, to be accurately diſtinguiſhed from a chronical Cough, accompanied by a copious Expectoration of Phlegm, and ſucceeded by a Conſumption, Loſs of Strength, and preternatural Heat, ſince this laſt Species of Conſumption in the Autumn and Spring frequently ſeizes Perſons ſubject to catarrhous Diſorders, and afflicts them for a conſiderable time; but may be happily removed by the Force of Nature, and the Aſſiſtance of Art.

But, that there may remain no Miſtake in diſtinguiſhing a Phthiſis from other Diſorders, we ſhall here give the Signs of it from *Cœlius Aurelianus*, who, in *Lib.* 2. *Cap.* 14. has the following Paſſage: "A Phthiſis is frequently produced by a previous Spitting of Blood, and ſometimes by a gentle, but long-continued Catarrh, or Cough, by which the Lungs are, at firſt, gently lacerated, and then ulcerated. A Phthiſis is accompanied with a latent Fever, which begins in the Evening, is alleviated in the Morning, and attended with a violent Cough at thoſe times. At firſt a ſmall, but afterwards a large Quantity of ſanious Spit is expectorated. Thoſe who fall into a Phthiſis, in conſequence of an Hæmorrhage, diſcharge, at firſt, a bloody Spit, which, afterwards, becomes feculent, and then livid, or green, and, laſt of all, white and purulent, ſometimes ſalt, and, at others, ſweet; whilſt the Voice is hoarſe, and ſhrill, the Breathing difficult, the Cheeks red, and the reſt of the Body of a cineritious Colour. A Phthiſis is, alſo, accompanied with a Loathing of Food, and a preternatural Thirſt. Some Patients have, as it were, a Senſe of a Wound in their Lungs, and even expectorate Fibres of them. The Pulſe is weak, hard, and formicular. A Phthiſis is, alſo, accompanied with an Inflation of the Feet. As the Diſorder increaſes, a Flux is brought on; and the Phlegm diſcharged, when thrown upon live Coals, is of a fetid and diſagreeable Smell." *Hippocrates*, in *Lib. de Morbis*, delivers the Signs of an approaching Phthiſis in the following manner: "A Patient, ſays he, is rendered Phthiſical, when the Phlegm falls down from the Head upon the Lungs; at firſt, for the moſt part, inſenſibly; and excites a gentle Cough: The Spit is, alſo, bitterer than uſual, and ſometimes there is a gentle Heat of the Body. But, in Proceſs of Time, the Lungs, and eſpecially their internal Parts, are exulcerated by putrid Phlegm; the Breaſt is oppreſſed by a Senſe of Weight, and acute Pain is perceived both in the anterior and poſterior Parts, and the Heat of the Body becomes more intenſe. The farther a Phthiſis proceeds, the more unmixed Pus is diſcharged, the more intenſe the Fever becomes; the Cough is more violent and continued; the Patient is racked with a Senſe of Hunger, and a Diarrhœa comes on."

Having thus ſpecified the Marks and Characteriſtics of a Phthiſis, we now come, from a Conſideration of the Phænomena obſervable in the Bodies of thoſe who have died of that Diſorder, to inveſtigate the Cauſes of the ſeveral Symptoms with which it is accompanied. Firſt, then, in all Perſons, who have died of a Phthiſis, either the Right, or Left, or both Lobes of the Lungs adhere ſo firmly to the Pleura and Ribs, or to the Vertebræ of the Back, that they cannot, without great Difficulty, be ſeparated with the Knife; and the Part, in which they adhere, is generally full of a putrid Serum, or Ichor. In ſome Phthiſical Patients, eſpecially ſuch as have been afflicted with an Empyema, I have obſerved one Lobe of the Lungs totally conſumed by the previous long-continued Diſorder of the Breaſt, and the other inflamed; which Circumſtances prove the Cauſe of the Patient's Death. For the moſt part, there are, alſo, in one of the Lobes of the Lungs, Impoſtumations, or cloſed Ulcers, of different Bulks, and ſometimes more, ſometimes fewer in Number; which, when laid open, contain partly a thick, and partly a fluid Pus. When an Inciſion is made, eſpecially in the ſuperior Part of either of the Lobes of the Lungs, there are found pretty large Cavities filled with Pus and Phlegm, almoſt of the ſame Kind and Colour with that before evacuated by the Mouth. Sometimes, alſo, in the Lungs, when become knotty and ſcirrhous, there are found ſpreading and fiſtulous Ulcers, like Cancers, which prey upon the adjacent Parts, and contain a ſanguineous and fetid Ichor. There are, alſo, Inſtances of ſcirrhous Tubercles, hard, like the Stones of Fruit, and containing a tophaceous, calculous, and putrid Matter, found in the Lungs. It is, alſo, to be obſerved, that, in Phthiſical Patients, the Heart is, for the moſt part, flaccid, and its Veſſels infarcted with polypous Concretions; a memorable Inſtance of which is found in *M. N. C. Decad.* 2. *Obſ.* 35. In the Pericardium, alſo, and frequently in the Cavity of the breaſt, there is a large Quantity of impure and fetid Serum. As for the Abdomen, and other Parts, the Veſſels are generally without Blood, the Liver large and pale, the Glands of the Meſentery tumefied, the Omentum deſtroyed, and all the Fat, both of the internal and external Parts, appears to the View: Thoſe, who deſire a farther Knowledge of the Phenomena obſerved in diſſecting Phthiſical Patients, may conſult *M. N. C. Decad.* 1. *An.* 1. & 2. *Decad.* 2. *An.* 4. *Obſ.* 45. 118. *An.* 8. & 9. *Cent.* 3. & 4. *Obſ.* 118. *Cent.* 8. *Obſ.* 105. *Cent.* 9. *Obſ.* 16. & 26. *Cent.* 10. *Obſ.* 143. *Vorzaſcha. Obſ.* 100. *Loſſius*, *Obſ.* 11. *Pawius*, *Obſ.* 22. *Platerus*, *Lib.* 3. *Obſ.* 189. & 690. and *Pezoldus*, *Obſ.* 63, 64. 74. and 92.

Hence it is ſufficiently obvious, how violent the Injury done to the Lungs muſt be in a Phthiſis, in order to induce Death. We now come to inquire into the Cauſes productive of ſuch an Injury; among which the moſt conſiderable are ſchirrous Stagnations in the vaſcular, veſicular, and membranous Subſtance of the Lungs; which, if conſiderable, are not, without the greateſt Difficulty, to be removed, on account of the continual and reciprocal Paſſage of the Air. *Hippocrates*, in *Lib. de intern. Affect. Cap.* 4. ſpeaks concerning this in the following manner: "When the Lungs receive Blood, or a ſalt Phlegm, without again diſcharging them, but retain them impacted in them, Tubercles are formed, and come to a Suppuration in the Lungs. From the Beginning of the Diſorder, through its whole Courſe, there is an acute, dry Cough, a Rigor and Fever, a Pain in the Back and Breaſt; and ſometimes in the Sides. The Breathing, alſo, is ſo violent, as to force the Patient to ſit in an erect Poſture. Then the Pus is corrupted, and expectorated in large Quantities." *Aretæus*, alſo, in *Chron. L.* 1. *Cap.* 8. has given us nearly the ſame Deſcription of Phthiſical Patients: "Before, ſays he, Phthiſical Patients can diſcover their Diſorder by manifeſt Signs, eſpecially by putrid and purulent Spit, they have Tubercles, or ſcirrhous Knots, formed of a viſcous and toughiſh Matter, which gradually becomes hard in their Lungs. Thus they live in a conſumptive State for ſeveral Years before theſe Tubercles are corrupted, and formed into Abſceſſes. If there are ſuch Tubercles in the Lungs, the Patient is afflicted with a dry, ſtrong, and ſonorous Cough, an acute and pungent Pain of the Breaſt, a Difficulty of Breathing, and a kind of Uneaſineſs and Reſiſtance in the Breaſt, from the profound Attraction and Inſpiration of the Air. Then the Cough becomes more violent, eſpecially after ſtrong Exerciſe."

Though this Doctrine of *Hippocrates* and *Aretæus* is ſtrictly agreeable to Truth, yet we ſhall, for the better Illuſtration of the Subject, add ſome Obſervations. Theſe Tubercles, filled with a viſcid Matter, conſtitute the Beginning of the Abſceſſes, which are nothing elſe, but Ulcers of different Bulks, ſurrounded in a peculiar Membrane. Theſe Impoſtumations, when ſmall, are ſometimes expectorated by Cough; but when they become large, and break internally, Abſceſſes and Cavities are formed; a purulent copious Spit, mixed with Phlegm, is expectorated; and then a true Phthiſis is preſent. Sometimes, alſo, theſe ſcirrhous Knots, which are

long ſo latent, as to produce only a dry Cough, in conſequence of their acrid Matter retained and pent up, degenerate into cancerous, fiſtulous, ſpreading, and fetid Ulcers; which ſo conſume and putrefy the adjacent Parts, that, according to *Foreſtus*, in *Lib.* 16. *Obſ.* 14. and 53. Portions of the Aſpera Arteria have been ſpit up; and, according to *Sylvius*, in *Obſ. Lib.* 2. *Cap.* 12. Ramifications of the Pulmonary Vein have been evacuated in Coughing.

There are, alſo, other Beginnings of a Phthiſis, eſpecially an Hæmoptyſis, when ill-treated, or when a large Quantity of Blood is loſt; for then the Blood is eaſily extravaſated from the ſmall Veſſels of the Lungs into their Air-bladders; and, becoming ſtagnant, it putrefies, corrodes the adjacent Parts, forms Sinuſes, or is reduced into Nodes and Tubercles. And I can, from my own Experience, affirm, that almoſt half of the Phthiſical Patients, who have ſubjected themſelves to my Care, received the Origin of their Diſorder from a previous ill-cured Spitting of Blood. Among the Beginnings of a Phthiſis we may, alſo, with the Antients, reckon a ſalt Catarrh for a long time affecting the Breaſt, and which is frequently ſucceeded by a Phthiſis.

We now come to inquire into the Origin of theſe Cauſes. The Stagnation, then, of the Blood firmly impacted in the Veſſels is the Origin, not only of a Phthiſis, but, alſo, ſeveral other Diſorders; for when the Fluids do not circulate, they loſe their former temperate Nature, become impure, ſaline, and acrid; or, by filling the minute Veſſels too full, produce Obſtructions, Indurations, and Scirrhuſes. Now theſe fatal Stagnations of Blood and Humours, in the minute Veſſels of the Lungs, proceed from too impetuous and copious Congeſtions of the Humours to a Part already too faint and languid, ſo that the Veins cannot return ſo much as they received from the Arteries.

But there are various other Cauſes, which are capable of inducing ſuch a fatal Stagnation of the Blood and Humours in the Lungs, and, conſequently, contributing, in a remote manner, to the Production of a Phthiſis. The moſt conſiderable of theſe Cauſes is, an hereditary Diſpoſition, conveyed from Parents to Children; in conſequence of which they readily fall into a Phthiſis, when any ſlight Cauſe occurs. This is confirmed, not only by Experience, but, alſo, by the Authority of the moſt celebrated Phyſicians. Thus *Fernelius*, *in Patholog. Lib.* 5. *Cap.* 10. informs us, "That ſuch as are ſprung from "conſumptive Parents, by a kind of hereditary Right, become "conſumptive; and we often obſerve, that a Phthiſis rages in "ſuch Families." The Reaſon of this is obvious; for ſince this Proclivity to Diſeaſes received from the Parents principally conſiſts in a bad Conformation of the ſolid Parts, or ſuch a Laxity of the Fibres and Veſſels, as is inſufficient, with a proper Effort, to promote the Motion of the Fluids conveyed to them, the Reaſon is plain, why thoſe, who have naturally weak and flaccid Lungs, ſhould be more ſubject than others to Diſorders of the Breaſt, and eſpecially to a Phthiſis. Among the Perſons ſubject to this Diſorder, we may, alſo, with *Hippocrates*, reckon thoſe of narrow and depreſſed Cheſts, whoſe Scapulæ are prominent, like Wings, whoſe Ribs are protuberant, whoſe Necks are oblong, or who are gibboſe.

It is, alſo, certain, not only from Experience, but, alſo, from the Authority of *Hippocrates*, in *Aph.* 9. *Sect.* 5. that Perſons of ſlender and tender Habits, of tall Statures, and between the eighteenth and thirty-fifth Years of their Age, are highly ſubject, not only to a Spitting of Blood, but, alſo, to a Phthiſis; for no other Reaſon, but becauſe, at this Period of Life, the Veſſels are more tender, and eaſily expanded, than in Perſons farther advanced in Years. But generally a Spitting of Blood and Phthiſis happen moſt readily to full-grown and young Perſons, who, being of a ſanguineous and choleric Habit, are eaſily ſubject to Commotions of Mind, and have had frequent Hæmorrhages from the Noſe, in their Childhood, eſpecially when they are over-heated by too violent Exerciſe; for then the Blood, being copiouſly and impetuouſly conveyed to the ſuperior Parts and Breaſt, cannot return freely to the Heart through the minute Veſſels of the Pulmonary Artery and Vein. Hence, in the larger Ramifications, the ſtagnant Blood muſt neceſſarily produce Expanſions, Ruptures, and Extravaſations.

This Diſorder is, alſo, frequently produced by an unſeaſonable Drinking of ſpirituous Liquors. Nor is it difficult to prove this, ſince it is almoſt univerſally known, that, in the Countries productive of Wines, all the Diſorders incident to the Breaſt, and eſpecially a Spitting of Blood, and a Phthiſis, are far more frequent, than in other Climates. Hence *Hoefferus*, *in Hercule Med. Lib.* 1. *Cap.* 3. juſtly concludes, that a Phthiſis being ſo endemial, and deſtroying ſuch Numbers in *Lower Auſtria*, is owing to nothing, but their exceſſive Uſe of generous Wine, eſpecially in the Morning.

We now proceed to conſider thoſe Cauſes which produce the Deſluxion of ſaltiſh Humours in the Breaſt. This Humour the Antients in general aſſerted to come from the Head, as if all Humours conveyed to the Breaſt proceeded from it: But this Opinion is not ſufficiently perſpicuous, and founded on Experience. Too copious a Congeſtion of ſerous Blood to the Breaſt, and eſpecially to the Fauces, and Whole of the Aſpera Arteria, which is covered with an internal glandular Coat, is rather to be accuſed, eſpecially in ſerous Patients, and thoſe, who, during their whole Lives, have been ſubject to Stuffings of the Head, Coryzas, and frequent Catarrhs; for if more Blood and Serum is conveyed to the glandular Parts through the Arteries, than can return through the Veins, there is a great Secretion of the Serum, which, increaſing in Quantity, is coagulated by the Admiſſion of the free Air, and, at laſt, often expectorated in large Quantities. In Proceſs of Time, when the Diſorder continues, and other Cauſes concur, ſuch as Crudities ariſing from a bad Diet, or Indigeſtion, an obſtructed Perſpiration, or profound Grief, the Serum acquires a ſaline and corroſive Nature; in conſequence of which, in Proceſs of Time, it corrodes the Veſicles and tender Veſſels of the Lungs.

From what has been ſaid, we may eaſily underſtand, how injurious cold and northerly Winds, rainy, cloudy, and cold Weather, which, by relaxing the Tone of the Pulmonary Veſſels, accumulate the Sordes in them, muſt neceſſarily be to conſumptive and phthiſical Patients; ſo that, with *Hippocrates*, in *Aph.* 10. *Sect.* 3. we may juſtly affirm, that the Autumn is prejudicial to conſumptive Patients. And, indeed, the Influence of the Air is not more conſiderable in producing any Diſorders, than thoſe of the Breaſt, and eſpecially a Phthiſis. Hence *Tulpius*, in *Obſ. Med. Lib.* 2. *Cap.* 10. juſtly aſſigns the State of the Air, as the Cauſe why Impoſtumations, and Phthiſical Indiſpoſitions, are ſo frequent in *Holland*, in marſhy Places, and ſuch as are expoſed to an Air perpetually impregnated with putrid Vapours.

We now come to inveſtigate thoſe Diſorders, which generally diſpoſe to a Phthiſis, among which we may juſtly reckon the Small-pox. I know many Children, and young Perſons, who, after the Small-pox, have been ſubjected to various Diſorders of the Breaſt, which have laſted for ſeveral Years, ſuch as a dry Cough, an acute Senſe of Pain, a Difficulty of Breathing, a Conſumption, and a ſlow Fever, who, at laſt, upon the Formation of an Abſceſs, have died, among whom was the Prince of *Saxony*. Almoſt the ſame Misfortunes are produced after the Meaſles; for, in theſe exanthematous Diſorders, the Serum is highly acrimonious, and, not only in the Beginning of theſe Diſorders, remaining firmly in the nervous Membranes of the Lungs, excites a dry and uneaſy Cough, but, alſo, leaves a conſiderable Weakneſs in the Lungs, an Expulſion of the peccant Matter being made to the Surface of the Body. Now, if the Patients, before the whole peccant Matter is carried off by Tranſpiration, expoſe themſelves to the free Air, eſpecially in the Spring or Autumn, it readily happens, that the Remains of the peccant Matter, receding to the internal Parts, acts upon, irritates, and exulcerates the weakened Lungs: See *Thomas Bartholine*, *Cent.* 4. *Inſt.* 43. and *Michaeli*, in *Prax. Clin. Part.* 1. *Lib.* 3. *Cap.* 5.

It, alſo, frequently happens, that, after Efferveſcences of the Skin, ſuch as the Itch, the Gutta Roſacea, ſcorbutic and purple Spots, are repelled, a Phthiſis is often produced. The ſame Diſorder is, alſo, frequently cauſed by the Suppreſſion of copious Sweats, by the unſeaſonable Treatment of Ulcers of the Head and Feet, and by the too ſpeedy Conſolidation of Fontanels. Nor are there wanting Inſtances, in which a Phthiſis has been produced by the Repreſſion, or unſkilful Treatment, of an Eryſipelas, and Gout-pains; for ſince, by this means, the acrid and cauſtic Matter is retained in the Habit, and reſorbed through the Veins by the Maſs of Blood, hence it happens, that, being conveyed to the nervous and tender Membranes of the Lungs, it is firmly impacted in them, and, by irritating, conſtricts them. Hence the conſtricted Veſſels muſt, at laſt, be obſtructed and corroded. I, alſo, remember to have ſeen a Phthiſis produced, in conſequence of curing Tumors under the Axillæ, and behind the Ears; ſo, alſo we may readily, ſuppoſe a Phthiſis frequently generated by a Suppreſſion of the hæmorrhoidal and menſtrual Diſcharges.

There are, alſo, other Inſtances, though no common, in which, beſides a Spitting of Blood, a Phthiſis may, in ſome Patients, be induced by other Hæmorrhages; and this principally happens in thoſe Patients, who, either from hereditary Diſpoſition, or from other Cauſes, having brought on a Want of due Tone in the Lungs, are diſpoſed to this Diſorder. This Doctrine is, alſo, confirmed by Experience, which informs us, that not only a Redundance, but, alſo, a Defect of Blood has a ſtrong Tendency to produce Stagnations. Hence thoſe, who place the proximate Cauſe of a Phthiſis in a Plethora, only palpably contradict Reaſon and Experience.

It is diſputed, among Phyſicians, whether a Phthiſis is contagious: But I do not heſitate to affirm, that it is; or, at leaſt, to aſſert, that, if the Miaſma of this Diſorder is not ſufficient

to

to induce a Phthiſis, it is, nevertheleſs, capable of promoting it, if there is already a Diſpoſition to it; for all ulcerous and corrupted Matter is of ſo ſurpriſing and contagious a Nature, that many malignant and contagious Diſorders, ſuch as the Itch, the Leproſy, the Small-pox, old ſordid Ulcers, peſtilential Carbuncles, and Dyſenteries, are to be accounted for from hence. Nor am I of Opinion, that the Nature of the Phthiſical Miaſma is ſo malignant, as ſuddenly, and, at a Diſtance, to prove infectious; but that it only does ſo to ſuch as continually converſe with Phthiſical Patients. This Doctrine is confirmed to us by ſome of the moſt celebrated Phyſicians. Thus *Riverius*, in *Cent.* 1. *Obſ.* 99. gives us an Inſtance of a Maid, who became Phthiſical by attending her Miſtreſs, who was in that State, Day and Night; and, in *Cent.* 4. *Obſ.* 92. he mentions a Girl infected by her Siſter, who had become Phthiſical by giving the Breaſt to a Man in that Condition. *Schenckius*, alſo, in *Lib.* 3. *Obſ.* 133. informs us, that the Spit of Perſons labouring under a confirmed Phthiſis is ſo contagious, that a Phyſician, only by ſmelling it, became Phthiſical. A Phthiſis, produced by Contagion, is, alſo, deſcribed in *M. N. C. Cent.* 9. *Obſ.* 26.

As for the Prognoſtic of this Diſorder, that a true Phthiſis is a violent Diſeaſe, and not to be cured without the greateſt Difficulty, is not only known to the Vulgar by many fatal Inſtances, but, alſo, confirmed by long Experience to the Phyſician. Thus *Hippocrates*, in *Lib.* 1. *de Morb.* informs us, "That "when Conſumptions happen, they neceſſarily prove mortal." He is ſeconded in this by *Galen*, in *Lib. de Locis affect. Cap.* 8. and 5 *Meth. Medend. Cap.* 1. & 8. *Celſus*, in *Lib.* 3. *Cap.* 22. informs us, "That a true Phthiſis ought to have proper "Meaſures taken with it in the Beginning, ſince, when it be-"comes inveterate, it is not eaſily cured." Among latter Authors, ſee, with reſpect to the Difficulty of curing a Phthiſis, *Foreſtus*, in *Obſerv.* 45. *Lib.* 16. *Rodericus a Fonſeca*, *Tom.* 1. *Conſult.* 58. *Tom.* 2. *Conſult.* 48. and *Timæus a Guldenklee*, in *Epiſt. Lib.* 3. *Cap.* 2. where theſe Words occur: "I in-"genuouſly confeſs, that, during the whole Courſe of my Pra-"ctice for thirty-ſeven Years, I could never totally reſtore ſuch "as had their Lungs ulcerated; though I left no Means un-"tried, which could in the leaſt contribute to the Cure of this "Diſorder: Nor have I ſeen any one in this Condition totally "recovered by the moſt celebrated Phyſicians."

But tho' the Cure of a Phthiſis is very difficult, and even impoſſible, when the Diſorder diſcovers itſelf by ſuch manifeſt Signs, as to appear to the Vulgar, yet I would not affirm the like of every Phthiſis, eſpecially when as yet in its Beginning; for I know ſeveral Inſtances, in which, after Wounds of the Lungs, a Spitting of Blood, a Rupture of the Veſſels, a Pleuriſy, and Peripneumony, the Patients have laboured under an Abſceſs and Impoſtumation of the Breaſt, but have, nevertheleſs, been totally cured, by taking due Meaſures in time. Beſides, I, and others, have frequently obſerved many ſprung from Phthiſical Parents, who have had their Breaſts depreſſed, and their Scapulæ prominent, like Wings; who, being addicted to Anger, had in their Youth frequent Hæmorrhages from the Noſe, without any external Cauſe; who have had ſaline Defluxions on the Breaſt and Fauces, accompanied with a dry and violent Cough, even in the Summer; who have ſurpriſingly loſt their Fleſh, and perceived a Heat in the Palms of their Hands, whilſt their Cheeks as yet remain florid; totally cured by proper Medicines, and a due Regimen. I have, alſo, ſeen Abſceſſes of the Lungs, where a large Quantity of white equal Pus, of one Colour, has been expectorated, but where the other Parts of the Lungs have not as yet been corrupted, nor ſpoiled, with ſcirrhous Indurations, and ulcerous Fiſtulas, and where the Veſſels of the Heart and Lungs have not been infarcted with polypous Concretions, happily cured by proper Remedies, and a due Regimen.

But it may here be aſked, by way of Objection to my Doctrine, Why is it, that even beginning Phthiſical Diſorders are ſo rarely cured? But this is frequently brought about by various Cauſes, the moſt conſiderable of which ſeems to be, that we are not always ſufficiently aſcertained of the Preſence, Nature, and genuine Cauſes, of a true Phthiſis, by evident diagnoſtic Signs. Thus *Fernelius*, in *Pathолog. Lib.* 5. *Cap.* 10. informs us, "That a latent Abſceſs, at firſt, neither known "to the Phyſician, nor Patient, is often the Cauſe of this "Diſorder; in conſequence of which, the Patient neither de-"ſiſts from his uſual Buſineſs, nor thinks himſelf afflicted with "any Diſeaſe; but bears the ſecret Cauſe of his Death in his "Breaſt, without knowing it. However, ſome have, in a "Quarter of an Hour, died unexpectedly of this Diſorder, in "whom, when diſſected, no other Cauſe of their Death could "be diſcovered, than the ſudden Breaking of an Impoſtu-"mation in the Lungs; by which the Patient was ſuffocated. "But all ſuch Patients are, before the Rupture of the Abſceſs, "afflicted with a Cough, a Spitting of Blood, an Heavineſs of "the Body, a ſlight Oppreſſion of the Breaſt, and a Difficulty "of Breathing, which rarely accompany a Conſumption, but "are Signs frequently common to other Diſorders." Beſides, we may be convinced of the difficult Diagnoſtics of a Phthiſis by the frequent Errors committed, in this reſpect, by the moſt celebrated Phyſicians. Thus many are accounted Phthiſical, who, labouring under a chronical Cough, accompanied with a catarrhal Defluxion, diſcharge a thick Matter of a whitiſh-green Colour; or who are afflicted with a ſtomachic, or hypochondriac Cough, ariſing from the Sordes of the Primæ Viæ falling upon the Lungs. A moiſt Aſthma, eſpecially, when it ariſes after a Suppreſſion of the Menſes, or Hæmorrhoids, and a conſequent Regurgitation and Congeſtion of the Humours to the Breaſt, is frequently taken for a Phthiſis. It is, alſo, certain, that a ſlow Fever, accompanied with a Cough, a ſudden Extenuation of the Body, and colliquative Sweats, which ſometimes ſucceed Arthritic Pains, the Gout, or Scurvy, is, alſo, confounded with a Phthiſis; whereas, in the former of theſe Diſorders, there is no Solution of Continuity in the Lungs. Since, therefore, the Knowledge of a Pulmonary Conſumption is ſo difficult, hence we may infer, how uncertain and precarious the Cure of this Diſorder muſt be.

There is, alſo, another equally important Cauſe, which hinders the Cure of a Phthiſis, and of an Hectic ariſing from it; which is, that there are few Phyſicians, who know, with due Caution and Circumſpection, to uſe proper Medicines for this Diſorder; for, if in any Diſorder, certainly in a Phthiſis, the Caution of the Phyſician is neceſſary, on account of the ſo great Contra-indication of Remedies; for a Phthiſis requires laxative and moiſtening Medicines, gentle Traumatics and Aſtringents, and ſometimes mild Anodynes, which, unleſs exhibited with due Caution, at a proper time, and with ſufficient Regard to the Circumſtances of the Patient, are ſo far from affording any Relief, that they rather increaſe the Diſorder.

Having taken a general View of the Prognoſtics of a Phthiſis, we now come to conſider its Terminations or Events, whether ſalutary or fatal. Firſt, then, 'tis a very bad Sign, when the hectic Heat is more and more increaſed; when, in the Morning, the Pulſe is quicker than uſual, and when the Fleſh and Strength are conſumed, without being in the leaſt recruited by Sleep. Which Misfortunes generally the rather happen, if, when there is a large Quantity of Pus, there is only a ſmall Portion of it expectorated; for then it becomes more acrid and filthy, and, when thrown on the Coals, diffuſes a fetid Smell, the more the Fever is, alſo, increaſed. If, beſides, there is a great Difficulty of Breathing, accompanied with a Dread of Suffocation; if the Patient cannot lie on that Side, where the injured Lobe of the Lungs is; if his Breath is of a cadaverous Smell, and his Voice hoarſe; if he is afflicted with colliquative Sweats, a Diarrhœa, and a Swelling of his Feet, ſometimes accompanied with Pain; 'tis certain that Death is not far off. If the Expectoration is totally ſuppreſſed, the Patients gradually, but eſpecially in an erect Poſture of the Head, die, retaining their Reaſon.

But greater Hopes are to be entertained, if there is ſtill a conſiderable Degree of Strength, and the Reſpiration free, if the Appetite and Digeſtion are entire, if the Spit expectorated is white and equal, and if there is no hectic Fever. The Hopes of Recovery are ſtill the greater, if the Patient is of a good Habit of Body; if he has a large Cheſt; has no hereditary Diſpoſition to the Diſorder; and if his Heat becomes more mild, and the Subſtance of his Stools is compact; for, by means of theſe Circumſtances, Phthiſical Patients, eſpecially when they uſe a proper Regimen and Medicines, may often protract Life for a great many Years. Thus *Willis*, in *Lib. de Medicament. Operat. Sect.* 1. *Cap.* 6. *de Tabe ſeu Phthiſi*, ſpeaks in the following manner: "It ſometimes happens, ſays he, that a Cavity, or, perhaps, "two are formed in the Lungs with callous Sides every-where, "ſo that the Matter collected in them is not convey'd to the "Maſs of Blood, but is every Day totally expectorated, tho' its "Quantity ſhould be very large. Perſons in this Situation have "only, as it were, a Fontanel in their Lungs; and, although they "ſhould every Morning expectorate a large Quantity of thick, "or yellow, and even, as it were, purulent Spit, and a ſmall Quan-"tity of the ſame throughout the Day, yet in other reſpects, "they enjoy ſufficiently good Health, breathe freely and eaſily, "eat and ſleep well, have a due Quantity of Fleſh, or, at leaſt, "are bleſſed with a good Habit of Body, and are frequently cured. "Hence ſome are ſaid to have laboured under a Phthiſis for "thirty or forty Years, and even not to have had their Lives "ſhortened by this Diſeaſe." And, with reſpect to Ulcers of the Lungs, 'tis obſervable, that they may continue for ſeveral Years without any conſiderable Decay of the Body, whilſt the other Viſcera remain ſound and entire. See *Kerkringius*, in *Specilegio Anatom. Obſ.* 72. and *Barthol. Cent.* 2. *Hiſt.* 14. Nor is this difficult to be conceived; for as Nature ſometimes advantageouſly expels peccant and recrementitious Matter by an Ulcer of the Extremities, or by an artificial Ulcer, ſuch as a Fontanel, ſo I ſee no Reaſon, why the ſame Circumſtance ſhould not ſometimes happen in Ulcers of the Lungs.

The Phyſician ought, alſo, to be well acquainted with the particular Signs which manifeſt the Recovery of phthiſical Patients, which are, by *Aretæus*, in *Lib* 3. *Cap.* 1. excellently enumerated in thefollowing manner. " When phthiſical Patients be-
" gin to grow better, the Cough ſeizes leſs frequently, and at
" longer Intervals; a larger Quantity of ſanious and more moiſt
" Spit is expectorated; much aqueous Matter is evacuated by
" Stool; the Urine is copiouſly diſcharged, tho' it has as yet no
" Sediment; the Voice becomes more clear and ſonorous, the
" Sleeps are ſufficiently long, the Præcordia relieved, and the
" Pain remitting is, ſometimes, tranſferred to the Scapulæ; the
" Difficulty of Breathing is gentle and leſs frequent, but accom-
" panied with an Aſperity of the Voice; and, when theſe Things
" happen, the Patients recover."

The CURE.

The Application of proper Remedies, in a Phthiſis, is widely different, according to the different State of the Patient, with reſpect to Strength, the Time and *Cauſes of the Diſorder*. The Method of treating a Phthiſis in general, may be divided into curative, mitigative, and preſervative. The firſt is to be taken when there are ſuch Cauſes, ſuch Circumſtances, and ſuch a Condition of the Patient, as to lay a Foundation for expecting a Recovery, by means of proper Medicines. The mitigative Method is to be taken, when the Force of the Diſeaſe is ſo great, that it will not yield to the beſt Medicines; in which Caſe we are to mitigate the moſt urgent Symptoms, prevent ſuch as are worſe, and, by that means, protract Life as long as poſſible. And as the preſervative Method is the beſt, the moſt eaſy and ſafe, againſt all terrible Diſorders, ſo it is of the higheſt Importance in a beginning Phthiſis.

As for the curative Method, it is principally to be uſed, when, in conſequence of a broken Impoſtumation, an open Abſcels is formed, and a large Quantity of Pus expectorated; which moſt generally happens after the unlucky Termination of a Pleuriſy, or Peripneumony; after a Spitting of Blood; after Wounds of the Lungs, whilſt the reſt of their Subſtance is ſound, and neither corroded, nor ſcirrhous. In this Caſe, the beſt and ſafeſt Cure is Milk duly uſed, by which I have known many phthiſical Patients brought from the Gates of Death, and reſtored to perfect Health; for no Medicine has longer, or more univerſally, been found efficacious in the Cure of a Phthiſis, than Milk.

The moſt antient Phyſicians warmly recommended Milk for the Cure of this Diſorder, as is obvious from various Paſſages of *Hippocrates*. And *Galen*, who greatly extols Milk for a Phthiſis, in *Lib.* 5. *Meth. Medend. Cap.* 12. mentions a Place called *Stabiæ*, to which, on account of the Purity of the Air, the fine Paſturage for Cattle, and the conſequent ſalubrious Quality of the Milk, there was a great Conflux of phthiſical Patients, juſt as, in our Days, the Valetudinary and Infirm reſort to the medicinal Springs. This Method of Cure was known in *Italy* above an hundred Years ago; for the celebrated *Andreas Baccius*, in *Lib.* 4. *de Thermis*, informs us, " That the *Neapolitan* Phyſicians, as the
" laſt Reſource, ſend phthiſical Patients, ſuch as ſpit Blood, or
" thoſe afflicted with any Ulcers of the Thorax to *Stabiæ*, with
" ſo great Succeſs, that ſome remain in that healthful Part all
" their Lives."

Aretæus, alſo, one of the moſt skilful of the antient Phyſicians, in *Lib. 6. de Morb Chron.* does not heſitate to affirm, that phthiſical Patients ſtand in need of no other Thing for their Recovery, but the liberal Uſe of Milk. *Trallian*, alſo, who, in his Work *de Re Medica*, greatly extols Milk in all Diſorders of the Breaſt, in *Lib.* 7. has the following remarkable Paſſages: " If the
" whole Body, not having Nouriſhment convey'd to it, begins
" to decay manifeſtly, and if there is not much Pus in the Tho-
" rax, Milk alone ought to be exhibited to them; and, for this
" Purpoſe, that of Aſſes is beſt, becauſe it is an excellent Pur-
" gative." In another Place he ſpeaks in the following manner:
" I have frequently ſeen thoſe afflicted with a Difficulty of Breath-
" ing, relieved by the due and proper Uſe of Milk, which re-
" moves the peccant Matter lodged in the Cavities of the Lungs."
And, in the Part already quoted, when ſpeaking of an Hemoptyſis, he ſays, " Let all thoſe afflicted with a Spitting of
" Blood, uſe Milk; for no Medicine nor Aliment is ſo uſe-
" ful and beneficial to them as Milk; and thoſe, who, in the
" Beginning of this Diſorder, uſe Milk alone for a long time, are
" totally recovered. Thus, ſays that Author, I knew a certain
" Man, who, by uſing Milk for a whole Year, and abſtaining from
" Wine, was totally freed from a Spitting of Blood, and Pus, ſo
" that he did not afterwards fall into a Phthiſis."

It may, alſo, be ſhewn from Reaſon, without the Evidence of Experience, that Milk is an efficacious Remedy in Diſorders of the Breaſt. But 'tis to be obſerved, that all Milks are not of the ſame Kind, and of the ſame Efficacy for all Purpoſes, ſince, according to the Diverſity of Animals, and their reſpective Foods, they are poſſeſſed of different and peculiar Qualities, which are to be conſidered apart. Firſt, then, Aſſes Milk, which was always greatly eſteemed by the Antients, contains a great deal of ſweet Serum, but a very ſmall Quantity of earthy, calcous, and pinguious Subſtance; for which Reaſon, it is not eaſily coagulated, and conſequently but very unfit for Butter and Cheeſe. Its Whey is abſtergent, laxative, moiſtening, and proper for correcting the Acrimony of the Humours. Goats Milk does not contain ſo large a Quantity of Whey, as that of Aſſes; nor is it of ſo laxative and abſtergent a Nature, but of a thicker Conſiſtence. And as Goats eat the Leaves of Trees, which contain ſomething of a reſinous Quality, their Milk is very efficacious for the Conſolidation of ſuppurated Parts. Cows Milk is more pinguious, contains a large Quantity of Earth, but leſs Whey; for which Reaſon it generally yields a great deal of Butter and Cheeſe. This Species of Milk is of a temperating, nutritive, and conſolidating Virtue. Womens Milk, for medicinal Purpoſes, is preferable to all others; for it is the ſweeteſt of them all, and its nutritive Quality is ſufficiently obſervable in Infants. The Virtues of Milk are, alſo, different, according to the Diverſity of Herbs and Paſturage, which Animals eat. Hence Milk, in the Spring, is highly ſalutary, becauſe, at that time, the Vegetables abound with temperate Juices; whereas Milk in the Winter is accounted leſs ſalutary, becauſe then Animals feed on Hay and Straw.

Hence we may eaſily judge, that in all Diſorders of the Breaſt, and an univerſal Decay or Waſting of the Body, Milk may be accounted a Medicine proper for anſwering all Intentions: For, firſt, we find nothing more efficacious than Milk, eſpecialy that of Cows, for correcting, mitigating, and allaying the Acrimony of the Humours, which is the principal Cauſe of the Irritation, the violent Cough, and the Corroſion; for as this Species of Milk is capable of breaking the noxious Force of corroſive arſenical Poiſon, ſo 'tis much more efficacious in ſheathing up and obtunding the ſaline Spicula lodged in the Fluids of the human Body. But when the Intention is to deterge viſcid Humours, to cleanſe Ulcers, to render the Body ſoluble, to provoke Urine, and derive the Afflux of the Humours from the Part affected, Aſſes Milk is of all others the moſt efficacious, on account of the large Quantity of ſweet abſtergent Whey it contains. When wounded Parts are to be conſolidated and conglutinated, Goats Milk is beſt for anſwering the Intention. For nourihing waſted Parts, and reſtoring Strength, nothing is more effectual than Womens Milk, eſpecially when ſuck'd immediately from the Breaſts, without any Acceſs of the Air, by which its ſpirituous Principle is exhaled, and flies off. With reſpect to this Milk, the learned *Heſſer*, in *Epiſt. ad Verzaſcham*, ſpeaks thus: " There is certainly a divine
" Quality both in Womens and in Aſſes Milk, which I could
" not have believed, if I had not had the Evidence of my Senſes
" for it; for by their means I have, with my own Eyes, ſeen Per-
" ſons rendered, as it were, entirely new; and, by a due Uſe of
" theſe two Species of Milk, many have acquired not only a
" ſounder Habit, but, alſo, a better Colour, and more Strength."

Not only Milk, but, alſo, Whey, when duly prepared, is highly efficacious, and even ſometimes more powerful than Milk, in curing the chronical Diſorders of the Lungs, and the other Viſcera: For if the Obſtructions of the ſmall Veſſels of the Viſcera, which generally lay a Foundation for chronical Diſorders, are to be removed; if the viſcid and tenacious Humours are to be diſſolved; if the Emunctories are to be kept open, and the Heat of the Parts allay'd by proper Moiſture; Whey, prepared of whatever Milk, is preferable to the Milk itſelf. *See* LAC.

Hence the Reaſon is obvious, why not only in the Cure of Diſorders of the Breaſt, but, alſo, in that of the moſt terrible and obſtinate Diſeaſes, the moſt skilful Phyſicians, both among the Antients and Moderns, have always greatly recommended Milk. But the whole Secret conſiſts in the due Uſe of it, both for mitigating and curing Diſeaſes; for, if either Aliments or Medicines ſhould be improperly uſed, they prove more detrimental than beneficial. This ſhould be adverted to, eſpecially by thoſe of the Moderns, who ſtrenuouſly endeavour to deſtroy and diſcredit the medicinal Uſe of Milk.

But tho' the Uſe of Milk and Whey is ſufficient to anſwer many Intentions in the Cure of a Phthiſis, yet 'tis equally certain, that its divine Energy, in producing different Effects, may be aſſiſted and augmented by various means: For, firſt, the Efficacy of Milk is ſurpriſingly increaſed, and rendered truly Medicinal, if the Animals, whoſe Milk we uſe, are fed with Subſtances accommodated to the Intention of Cure, for, from the different Aliments which Animals and Women uſe, the Milk they afford, alſo, acquires a different Quality, ſince 'tis certain from Experience, that a Purgative exhibited to the Nurſe is, with the Milk, convey'd to the Child upon whom it operates. The Antients are, therefore, to be commended, who, in order to render their Milk more efficacious, gave their Aſſes and Goats, among their Food, ſuch Herbs as were poſſeſſed of a ſpecific Virtue againſt the Diſeaſe they intended to cure. Hence *Galen*, in the Part before-quoted, mentions the Herbs growing in *Stabiæ*, ſuch as Graſs, Knot-graſs, Baſtard-baum, the Bramble, Ivy, Shrub-treſoil, the Maſtich-tree, and ſome others, by eating which the Milk of the Animals was rendered highly ſalutary. This Cuſtom I have ſucceſsfully uſed, when, in order to the Abſterſion and Depuration of any Part affected, I have ordered Barley, Scabious, Scordium, Chervil, *German* Leopard's-bane, Hyſſop, Paul's Betony, and white Horehound,

to be mixed with the Food of the Animals, from which the Milk was to taken. But, when the Intention was to conſolidate, I have ordered their Food to be mixed with the ſeveral Species of Plantain, Ground-ivy, Agrimony, Yarrow, Sanicle, the greater Conſound, and Lungwort.

But there are ſtill other Methods of augmenting the medicinal Virtues of Milk, according to various Intentions; the moſt conſiderable of which is the mixing Milk with mineral Waters; a Practice, by me, firſt introduced into *Germany*; for when, upwards of thirty Years ago, I was, by a chymical Analyſis, inveſtigating the Principles of the mineral Waters in *Germany*, both hot and cold, and found no acid and truly vitriolic Salt in them, but rather one of an alcaline and neutral Kind, together with a ſubtile Earth, and fine Particles of Steel, I mixed Milk with theſe Waters, and that with ſuch Succeſs, as, in curing and alleviating many chronical Diſorders, to find happy Effects, which could neither be obtained by Milk alone, nor by the Waters exhibited ſeparately from Milk. Hence 'tis ſurpriſing, and even to be lamented, that there formerly were, and ſtill are, Numbers of Phyſicians, who, in a *Phthiſis and Exulcerations of the Lungs*, think cold mineral Waters highly prejudicial; and dare neither to preſcribe them alone, nor in Conjunction with Milk. Before our Times, however, two celebrated Phyſicians recommended cold mineral Waters in Diſorders of the Lungs. The moſt antient of theſe is *Raymundus Joannes Fortis*, in *Cent.* 2. *Conſil.* 20, 27, 28, 30. and eſpecially in *Conſil.* 34. where he ſpeaks in the following manner: "At a proper Seaſon of the Year, cold mi- "neral Waters I have found to be highly uſeful in Ulcers of the "Lungs; and to them I have ordered the Patients to have re- "courſe, as the laſt and moſt effectual Expedient; ſince, if the "Diſorder did not yield to them, I could hardly think, that it "could be removed by Decoctions, Milk, and other Things of "a like Nature." And the celebrated *Morton*, a later Phyſician of the *Engliſh* Nation, in his *Phthiſiologia*, recommends medicinal Waters in Diſorders of the Lungs, and when they are afflicted with ſteatomatous Tumors, accompanied with a gentle hectic Heat, on which Occaſion, he ſpeaks in the following manner: "I have ſeen, during a Courſe of ſeveral Years, many "Phthiſical Patients have their Appetites and Strength reſtored, "their Cough and hectic Heat leſſened, their Reſpiration ren- "dered freer, and, at laſt, their Diſorder totally removed, with- "out any Relapſe, by means of theſe Waters."

But though I would not preſcribe ſtrong mineral Waters in Diſorders which ariſe from a Solution of Continuity in the Lungs, eſpecially if very conſiderable, yet I can from Experience affirm, that mild mineral Waters, abounding with an alcaline Salt, ſuch as the *Selteran* and *Caroline* Springs, mix'd either with the Milk of Aſſes, or that of Goats, afford ſurpriſing Relief, not only in a chronical and obſtinate Cough, accompanied with an oppreſſive Pain of the Breaſt, a Difficulty of Breathing, a ſlow Hectic, and a Conſumption, but, alſo, in a deep Suppuration of the Lungs, and a true Phthiſis; for, by this Admixture of the mineral Waters, the Milk is render'd more efficacious and powerful in diſſolving the tough and viſcid Matter, removing the Obſtructions of the capillary Veſſels, and deterging and cleanſing the Ulcers. But uſing this Mixture of Milk with medicinal Waters is ſtill more indicated, when ſuch Diſeaſes of the Lungs are ſupported by hypochondriac, ſcorbutic, arthritic, or calculous Diſeaſes, which frequently happens.

This Method of correcting Milk by various Admixtures was not only known, but, alſo, practiſed, by the antient Phyſicians. Hence, in *Hippocrates*, *Trallian*, *Aetius*, and *Aretæus*, there are ſeveral Inſtances in which they preſcribed Milk mixed with Water, for Phthiſical Patients; or Hydromel, mixed with Milk; to which *Hippocrates*, in *Lib.* 2. *de Diæta*, aſcribes a ſurpriſing Efficacy, affirming, that it ſoftens the Lungs, allays the Cough, procures an Expectoration of the Spit, and promotes a Diſcharge of the Urine. The celebrated *Sponius*, in *Aphoriſm. novis*, *Sect.* 5. *Aph.* 99. not only extols the external and vulnerary, and, alſo, the internal Uſe of Lime-water, in curing an Impetigo, and Leproſy; but, alſo, commends the Mixture of the ſame Water with Milk in the following manner: "Beſides, ſays he, this Water, mixed with Milk or "Whey, produces ſurpriſing Effects in internal Ulcers, Di- "arrhœas, and Dyſenteries, as I was informed by Mr. *De-* "*cloſure*, a celebrated practical Phyſician in *Gaſcony*." Nor ſhall I condemn this Method, ſince in Dyſenteries, accompanied with an Exulceration of the Inteſtines, I have always found Milk, mixed with the *Selteran* Waters, an incomparable and highly efficacious Medicine.

But let us inquire with what other Remedies Milk may be commodiouſly joined: For curing, therefore, violent Diſorders of the Lungs, in a true Phthiſis, Infuſions and Decoctions, prepared of vulnerary and pectoral Herbs, have not only been highly eſteemed by Phyſicians, but, alſo, by the common People. The Herbs moſt recommended for this Purpoſe, are the greater Conſound with its Roots, Saracens Conſound, Coltsfoot, ſharp-pointed Plantain, ſpotted Lungwort, Sanicle, Spleenwort, Scabious, Paul's Betony, Agrimony, Ground-ivy, white Horehound, Yarrow with its Tops, St. John's-wort with its Flowers, Roſe-flowers, and others of a like Nature, which are to be boil'd either in Ale or Water, adding Figs, Honey, and the Seeds of Fennel, and ſtellated Aniſe. Nor are there wanting Inſtances of conſiderable Benefit done to Phthiſical Patients by theſe means; ſince when there is only a ſimple Abſceſs without a ſcirrhous Induration, or a polypoſe Concretion, they contribute much to the Conſolidation of the affected Parts. It muſt, however, be own'd, that theſe Decoctions, in conſequence of their aſtringent Quality, have produced very unhappy Effects; eſpecially, when, in the Beginning of the Diſorder, the Lungs are affected with hard Tubercles, or when they are unſeaſonably uſed to ſtop a Spitting of Blood; for by this means the extravaſated Blood is eaſily coagulated, and the minute Veſſels obſtructed; ſo that there happens a far greater Stagnation of the Blood and Humours in the Lungs, a Circumſtance which has the ſtrongeſt Tendency to produce a Phthiſis. But, in order to prevent theſe Dangers, ſuch Infuſions and Decoctions may properly be mixed with an equal Portion, or only half the Quantity, of Milk; by which their aſtringent Quality is, in ſome meaſure, deſtroy'd, and the Acrimony of the Humours corrected.

If the Primæ Viæ are to be cleanſed of any Sordes, Sena-leaves, Rhubarb, and Manna, may be commodiouſly infuſed, and gently boil'd either with Milk alone, Milk and Water, or Milk diluted with temperate mineral Waters; ſince, otherwiſe, Phthiſical Patients, eſpecially of delicate Habits, are eaſily injured even by mild Purgatives. I have, alſo, obſerved, eſpecially when there was a large Quantity of acid Sordes in the Primæ Viæ, that a Dram or two of the Magneſia, which is nothing elſe but an highly ſubtile Flour of Quick-lime eliutriated, mixed with a few Ounces of Goats Milk, proved a ſafe and excellent Purgative.

In order to alleviate a violent Cough, which deſtroys the Strength and Sleep, to correct the Acrimony of the Humours, and relax the conſtricted Parts, the Antients, with great Succeſs, uſed their various Diacodiums, the Principal of which are compoſed of the Juice and Seeds of the Poppy. But the Moderns, for the ſame Purpoſes, uſe the Pilulæ de Cynogloſſo, and the Pilulæ de Styrace, which, when exhibited in a ſmall Doſe, are ſufficiently efficacious: But all theſe Medicines are render'd ſtill more efficacious, if they are exhibited about Bed-time, in a Draught of Milk. It is, alſo, ſometimes expedient, when there is a great Afflux of the Humours to the Breaſt, and when, in protracted and phthiſical Coughs, a great Corruption is to be dreaded, to make moderate Uſe of ſuch Remedies as provoke Urine, in order to derive the Impetus of the Humours from the Breaſt: For anſwering which Intention, we may uſe Milk and Whey, the diuretic Virtues of which are in ſome increaſed, by making them into an Infuſion with Seeds of Seleri, Parſley, *Cretan* Daucus, Gromwell, and Violets, well bruiſed together.

Beſides thoſe already mentioned, there are ſtill other Remedies highly beneficial, not only for the Depuration, but, alſo, for the Conſolidation, of thoſe Ulcers of the Lungs, which conſtitute a Phthiſis. The moſt conſiderable and celebrated of theſe are, the pectoral and vulnerary Balſams, of which, tho' there are various Kinds in the Shops, yet we ſhall only mention thoſe invented by the moſt celebrated Phyſicians. The beſt, then, is the juſtly celebrated Balſam of *Meibomius*, prepared in the following manner:

Take of the old Oil of St. John's-wort, two Ounces; of Sperma-ceti, ſix Drams; of the beſt *Venice* Turpentine, three Drams; of Dragon's-blood, one Dram; and of Laudanum Opiatum, ſix Grains: Mix all together, and let the Doſe be from one to two Drams.

Nor have I found the following Balſam leſs efficacious:

Take of the Oil of ſweet Almonds, two Ounces; and of the Flowers of Sulphur ſublim'd by Quick-lime, two Drams: Boil over a gentle Fire: Then add, of the Balſam of Capivi, one Dram; of Sperma-ceti, and Bees-wax, each half an Ounce; of the Extract of Saffron, half a Dram; and of the Oils of Aniſe, Fennel, and Mace, each ten Drops.

Another Balſam for anſwering the ſame End may be prepared thus:

Take of the beſt *Pruſſian* Honey, and Mountain Diacodium, each one Ounce; of the aqueous Eſſence of Myrrh, inſpiſſated, half an Ounce; of the Flowers of Sulphur, and

the Extract of the Tops of Yarrow, each two Drams; of the Extract of Saffron, half a Dram; and of the Oils of Mace and Safafras-wood, each eight Drops.

These noble and efficacious Balsams, when their Use is indicated, cannot be exhibited in a better, or more proper Vehicle, than a sufficient Quantity of the Milk of Asses, Goats, or Cows.

Having considered the curative Method in a Phthisis, we now come to treat of the palliative, or mitigative Method, by which we endeavour to render Phthisical Patients free from the most terrible and deplorable Symptoms, and to protract their Lives as long as possible. This Method is principally to be used in those Patients, in whom there is an intense Heat, gradually consuming the Flesh and Strength, which is generally excited by a Mixture of the purulent Matter with the Blood, and by which the Blood, being contaminated, is put into an Effervescence, and becomes more acrid and saline. In order, therefore, to extinguish this preternatural Heat, and correct the Acrimony of the Humours, nothing is more effectual than due Doses, either of Asses, or Womens Milk, exhibited in Conjunction with a proper Regimen. For answering the same Intention, Emulsions of the Four cold Seeds, and white Poppies, Decoctions of Barley, or Hartshorn, the Waters of Roses, Lilies of the Valley, and black Cherries, and Julap of Roses, may be frequently exhibited. The Virtue of these is greatly increased, if they are exhibited with the temperate nitrous Powders, which are of great Efficacy in a beginning Hectic. These Powders may be prepared in the following manner:

Take of Mother of Pearl, and Crabs-eyes, each two Drams; of purified Nitre, one Dram; and of the distilled Oil of Mace, four Drops: Mix all together, and exhibit one Dram for a Dose.

Nor, in order to allay the Violence of the Symptoms, are we to neglect Baths of sweet Water mixed with a sufficient Quantity of Cows Milk, and purified Nitre; by which means the constricted, tense, and dry Parts, are relaxed and moistened, the Cough allayed, the Heat lessen'd, and the Sleeps rendered more sweet and gentle; for which Reason such Baths are sometimes highly proper in the curative Method.

When the Lungs are affected with a callous and inveterate Ulcer, and a Spit, mixed with Pus, is daily expectorated, by which the Flesh and Strength are considerably impair'd, the principal Intention is, by correcting the acrid and saline Dyscrasy of the Blood and Humours, to prevent the farther Exulceration of the Lungs: This End is excellently answer'd by temperate Infusions of Ground-ivy, the Herb Costus, Chervil, Paul's Betony, Scabious, Coltsfoot, and Lungwort. But such Infusions must be frequently, and for a long time, used. In serous Persons, and such as are subject to Catarrhs, when the Disorder is brought on, and supported, by a large Quantity of impure Humours falling on the Lungs, in order to prevent the greater Congestion of the Humours to the Breast, for ordinary Drink the Patient may use a Decoction of China-root, and of Red-saunders prepared with Raisins, a Drink highly recommended by Authors for this Purpose.

In such a Condition of the Patient, we are, as much as possible, to endeavour to preserve the Tone of the Lungs. This Intention is excellently answered by Sugar of Roses frequently exhibited in the foregoing Decoction. This simple Remedy was not only known and commended by the *Arabians*, and especially *Avicenna*, but, also, some of the Moderns think, that this alone is sufficient to mitigate, and even to remove, a Phthisis. See *Zacutus Lusitanus*, in *Prax. Admir. Lib.* 1. *Obs.* 139. and *M. N. C. Decad.* 2. *Ann. Obs.* 19. and *Sylvaticus*, in *Consil.*

We are now come to consider the preservative Method of Cure, which consists in preventing a Phthisis in those who are subject to it by Nature, Age, Habit, or Errors in Regimen, by a seasonable Removal of its Causes, or in removing it, or preventing its further Progress, by proper Medicines, when it is already present. We have already sufficiently shewn, that in sanguineous, choleric, and slender Habits of Body, from the Age of eighteen to thirty-four, a Phthisis, or purulent Spitting, accompanied with a violent Cough, and a Difficulty of Breathing, is not only generally produced by a Spitting of Blood, but, also, frequently recurs; in which Case, the principal Intention of the Physician ought to be, to remove this Spitting of Blood, or, at least, so to mitigate it, as that it may not degenerate into a Phthisis.

In order, therefore, to remove a Spitting of Blood, besides the Efforts of Nature, there is no more safe and efficacious Remedy, than Venesection, duly repeated, till the End is obtained. This is confirmed, not only by Experience, but, also, by the Authorities of the greatest Physicians. Thus the celebrated *Boerhaave*, in his *Praxis Medica*, informs us, "That, "if we intend to cure a Person naturally disposed to a Phthi"sis, we are carefully to prevent his having a Spitting of Blood; "otherwise we cannot cure him. Hence, about the seven"teenth Year of his Age, Venesection is to be twice or thrice "used; Gestations are, also, to be used; and in this Method "we are to continue till the twenty-fifth Year of his Age. "I know a Family, the Father, Mother, and all the Chil"dren of which, died Phthisical, except one Son, whom I "preserved by this Method, who is now above fifty Years of "Age, has lived above the Time ascribed by *Hippocrates* for "the Access of a Phthisis, and has no bad Symptoms attend"ing him."

Besides Venesection, great Moderation, with respect to the Non-naturals, is to be used; for which Reason, 'tis necessary, that such Patients should carefully guard against violent Commotions, both of Body and Mind, and abstain from spirituous Liquors, and every thing which is capable of throwing the Blood into an Orgasm. And, since a Spitting of Blood, preposterously *treated with strong Astringents, easily degenerates into* a Phthisis, such Medicines are to be as carefully abstained from, as if they were as much Poison. In such a Case, it is rather expedient to use Milk and Water for Drink; gentle Laxatives of Manna and Sena-leaves; Powders, which allay the Ebullition of the Blood, prepared of Shells, Mother of Pearl, Crabs-eyes, and Nitre; with each of these we may commodiously join the Decoctions or Infusions above-mentioned.

But there is nothing so effectual either for preventing a Phthisis, or removing it, when begun, as a due Regimen and Method of living; which, among the Antients, *Celsus*, in *Lib.* 3. *Cap.* 22. has elegantly prescribed in the following manner: "A "Phthisis is, in the very Beginning, to be attacked by proper "Remedies: If the Patient's Strength admits, a long Voyage is "to be made, and a Change from a rare, to a more dense, At"mosphere is highly beneficial; for which Reason it is ex"pedient, phthisical Patients in *Italy* should sail to *Alexan*"*dria*. If any Circumstance forbids Sailing, the Patient is "to be removed in a Bed, or some other manner. He must, "also, abstain from Business, and every other thing which has "a Tendency to discompose his Mind; he is, farther, to indulge "himself in Sleep; Defluxions are to be carefully guarded "against, lest, perhaps, being somewhat relieved, his Condi"tion should again become worse. For this Reason Crudities, "the Influence of the Sun, and the Access of Cold, are to "be prevented. The Mouth and Fauces are to be co"vered, and the Cough removed by Medicines appropriated to "that Purpose. In such a State Water is to be drank, and "Milk may, also, be commodiously exhibited."

Celsus, in prescribing a dietetic Regimen proper for the Cure of a Phthisis, justly and principally recommends Exercise, and Choice of Air: Of almost the same Opinion is our justly celebrated *Sydenham*, who tells us, that he has prevented many Phthises, and cured many Phthisical Patients, by prescribing Riding. He, also, thinks, that 'tis of no small Importance what Air they breathe: "For, says he, Phthisical Patients are "much more happily cured in the Country, than in the Town, "since the Air of the former purges their Lungs, and contri"butes more to their Recovery, than any other Remedy." We are more effectually convinced of this, by considering by what Causes it principally happens, that in *Holland* and *England* so many die of a Phthisis; and that, in half of these, this Disorder is brought on by a Spitting of Blood. For, certainly, this is to be ascribed, not only to the gross Aliments, since these Nations use rich Food, eat much Flesh, and Sea-fish with high Sauces, by which is generated a crude Chyle and Blood, which, easily stagnating in the Lungs, dispose to a Phthisis; but this is rather principally to be ascribed to the Impurity of the Air, which is much impregnated with Smoke, by which the Bronchial Glands and Membranes, together with the minute Capillary Ramifications of the Pulmonary Artery, are dried; by which means a Consumption of the Lungs is, in Process of Time, brought on. The same Misfortune is, also, frequently produced by cold Weather, and Northerly Winds, which almost always prove offensive to the Lungs, especially of old Persons, and such as are disposed to a Phthisis; so that a considerable Number of Persons are destroy'd by this means. But nothing is more prejudicial, than exercising the Body strongly by Walking or Running against such a Wind; for by this means, I have frequently known Abscesses produced in the Lungs both of Men and Horses.

If any Disorder requires not only an accurate dietetic Regimen, but, also, a cautious and circumspect Use of Medicines, 'tis certainly a Phthisis, of which there is so great a Contra-indication of Remedies, that, unless they are all duly consider'd, the Physician may easily fall into an Error, and, instead of relieving, injure his Patient. Thus, in order to promote Expectoration,

pectoration, ſweet and pinguious pectoral Syrups, incraſſating Subſtances, and Preparations of Honey, are requiſite; by the immoderate Uſe of which, however, we deſtroy not only the Tone of the Lungs, but, alſo, that of the Stomach; and by that means produce a larger Quantity of Crudities, and a greater Congeſtion of Humours in the Breaſt. The ſlow, drying, hectic Heat requires Diluents, moiſtening Liquors, and Milk; which, however, in a moiſt Cough, increaſe the Afflux of the Humours to the Breaſt. The ſordid putrid Ulcers require balſamic reſinous Medicines, ſuch as Myrrh, *Venice* Turpentine, Balſam of Capivi, *Peruvian* Balſam, and the other conſolidating and vulnerary Balſams; which, however, by increaſing the inteſtine Motion and Heat of the Fluids, generally produce bad Effects.

We find the ſame Difficulty in thoſe uneaſy, and almoſt convulſive Commotions of the Breaſt, which, in long and violent Coughs, are excited by the Acrimony of the Humours; for theſe require to be alleviated by Anodynes, Preparations of Poppies, oleous and ſomniferous Subſtances; which, however, when frequently exhibited, ſurpriſingly deſtroy the Strength: The corroded, diſſolved, and ulcerated vaſcular Subſtance of the Lungs requires conſolidating and gently aſtringent Medicines; but ſince they retain in the Habit the extravaſated Humours, which ought to be eliminated, and ſuppreſs Expectoration, they, by theſe means, increaſe the Corruption: Beſides, if any one intends the Conſolidation of Ulcers, he ought to prevent the Afflux of the Humours to the Part affected; which is obtain'd both by vulnerary Subſtances, and Decoctions of the Woods, and by Powders compoſed of *Armenian* Bole, Sealed Earth, and Blood-ſtone; but, when there are Tophi, Tubercle, and Indurations of the Lungs, theſe are enlarged by ſuch Medicines. In order to extinguiſh the hectic Heat, nothing is more beneficial and efficacious, than the nitrous Powders: But even theſe do not at all times produce the deſired Effect; ſince they readily prove purgative, and leſſen the Syſtaltic Force of the Stomach and Inteſtines. Milk is, alſo, of ſingular Efficacy in the Cure of theſe Diſorders: Yet, in young and plethoric Habits of Body, where there is a beginning Phthiſis, and many acid Crudities, accompanied with a ſlow Fever, I have often obſerved it highly prejudicial.

As Veneſection is highly uſeful, not only for the Cure of a beginning Phthiſis, but, alſo, for preventing it in young Perſons, ſo it is very improper, with a curative Intention, when the Strength is greatly exhauſted by the Diſeaſe, and the Heat; unleſs, perhaps, we ſhould take away an Ounce, or an Ounce and an half, of Blood, for the ſake of Ventilation. Draſtic Purgatives, ſuch as Preparations of Aloes, Scammony, and Hellebore, but more eſpecially Emetics, are highly prejudicial, not only by impairing the Strength, but, alſo, by carrying off the temperate Moiſture of the Body: Hence, when the Humours are to be derived from the Breaſt, and gently evacuated by Stool, theſe Ends are moſt commodiouſly obtain'd by Laxatives prepared of Manna, Tamarinds, Rhubarb, Agaric, and Sena-leaves: But if, when exhibited in a ſmall Doſe, theſe ſhould not be ſufficient for diminiſhing the Redundance of Humours, or if the groſs and viſcid Humours, which obſtruct the minute Veſſels, are to be reſolved and eliminated, we may, inſtead of theſe, ſubſtitute the Pilulæ de Succino Cratonis, or Pills prepared of Gum Ammoniac, Saffron, Mercurius Dulcis, Extract of Rhubarb, and Aloes.

Motion and Exerciſe, and eſpecially Riding, is highly commended for the Cure of a Phthiſis and Hectic, by the moſt ſkilful Phyſicians, both antient and modern. But in the Beginning of the Diſorder, where the Patient is young, and the Habit plethoric, it often does more Harm than Good, by exciting a Spitting of Blood. Nor is it expedient, where the Lungs are violently injured, and a Vomica is ſuſpected, ſince, by the briſk Motion of the Horſe or Chariot, a fatal Inflammation may readily be brought on. But 'tis far otherwiſe in hypochondriac Conſumptions, in which moderate and often repeated Exerciſe is highly beneficial.

The more temperate, pure, and ſerene the Air is, the more beneficial it is to Phthiſical Patients; for a moiſt Intemperature of the Atmoſphere is ſurpriſingly injurious to the Lungs, which are already relaxed, tumid, and infarcted. 'Tis, alſo, highly expedient, to impregnate the Air ſurrounding the Patient, with the balſamic Particles ariſing from Fumigations of Maſtich and Amber; or to render the Air drawn in balſamic, by holding a Piece of the beſt Myrrh in the Mouth, till it is diſſolved by the Saliva.

Since the Beginning of a Phthiſical Exulceration is frequently produced by a ſaline Catarrh, or a certain acrid cauſtic Matter, convey'd, by Tranſlation, from other Parts to the Lungs, in order to derive this Afflux elſewhere, and evacuate the Humours, we may ſafely and advantageouſly uſe the actual Cautery; by the Application of which, between the Scapulæ, and

in the Neck, we read of an imminent Phthiſis happily removed, in *Riverius*, in *Obſ. Cent.* 2. *Obſ.* 67. 78. *Cent. Obſ.* 92. and in *Schenkius*, *Obſ.* 56.

In order the more effectually to inſtitute the Cure of a Phthiſis by Milk, either alone, or mixed with mineral Waters, the following Cautions are to be obſerved:

1. We ought diligently to inquire, whether the Strength of the Stomach is ſufficient to digeſt, and again expel, this Species of Medicine.

2. 'Tis expedient, that, before the Uſe of the Milk, the Primæ Viæ ſhould be well cleanſed from viſcid and acid Humours; which Intention is moſt effectually anſwer'd by a laxative Infuſion of Manna, whoſe Virtue is augmented by the Addition of a ſufficient Quantity of Tartar.

3. On the firſt Days, it is expedient, every Morning about ſix or ſeven, and every Afternoon about five o'Clock, to drink ſix or eight Ounces of Womens, or Aſſes Milk, and afterwards gradually to increaſe the Quantity.

4. After the Patient has for ſix or eight Days drank the Milk in this manner, a gently laxative Medicine, and ſuch as has a Tendency to evacuate the Fordes, is to be interpoſed, and repeated every ſixth Day.

5. He ought never to uſe Wine, nor Malt-liquors, for Drink, but rather Ptiſans of Barley, Hartſhorn, and Citron-peel. He muſt, alſo, carefully abſtain from Aliments of hard Digeſtion, and ſuch as generate bad Juices. On the contrary, Broths prepared of Tortoiſes, Cray-fiſh, Veal, Fowls, Lettuce, and Garden Succory, are of ſingular Service.

6. In order to augment the concoctive Force of the Stomach, which in a Phthiſis is very languid, 'tis expedient, between Meals, to exhibit ſome balſamic, pectoral, and ſtomachic Elixir, ſuch as that made of the beſt Myrrh, Saffron, Nutmegs, Orange-peel, Marſh-trefoil, and Liquorice-root.

In thoſe exceſſive and colliquative Sweats, which, in phthiſical and hectic Diſorders, exhauſt the Strength, beſides Whey and Emulſions, the Species de Hyacintho, mixed with a ſmall Quantity of Nitre, and half a Grain of Laudanum Opiatum for a Doſe, afford ſingular Relief. But, if, in conſequence of the Violence of the Cough, by which the Maſs of Blood and Humours is greatly exagitated, an exceſſive Profuſion of Sweat ſhould be produced, a gentle and corrected Opiate, ſuch as the Pilulæ de Styrace, or the Pilulæ Wildeganſii, may be commodiouſly exhibited with ſome temperating Powder, ſince, by removing the Cough, it checks and leſſens the Sweats. But, if, beſides the Cough, a colliquative Heat of the Blood ſhould, alſo, prove the Cauſe of the Sweat, *Morton* and *Pitcairn* are not afraid to preſcribe the *Peruvian* Bark, with one Grain of Laudanum Opiatum. *Hoffman.*

If an Ulcer has ſo corroded the Subſtance of the Lungs, that the whole Habit of the Body is by that means waſted and conſumed, the Patient is ſaid to labour under a Pulmonary Phthiſis, or Conſumption of the Lungs.

The Origin of ſuch an Ulcer may be deduced from any Cauſe capable of ſo ſtopping and detaining the Blood in the Lungs, that it muſt neceſſarily degenerate into a purulent Matter.

Theſe Cauſes may be reduced,

1. To that very Habit and Temperament of Body, in conſequence of which, the Patients firſt begin to ſpit Blood, and are afterwards afflicted with an Eroſion and Exulceration of the Lungs. This Habit or Temperament of Body conſiſts, firſt, in the Tenderneſs of the arterial Veſſels, and the Impulſe of the Blood, when in any Degree acrimonious. Such a Conſtitution is known by the Sight of the ſmall and tender Veſſels, and of the whole Body; by the Length of the Neck; a flat and narrow Thorax; depreſſed Scapulæ; an highly red, thin, diſſolved, acrid, and hot Blood; a very white, and ſometimes a roſy blooming Complexion; a bright and ſhining Skin, Chearfulneſs of Temper, and an early Ripeneſs and Subtilty of Genius. Secondly, in ſuch a Weakneſs of the Viſcera, as to occaſion thoſe Aliments, which are in their own Nature too tenacious to create Obſtructions, Putrefactions, and Acrimony; and in conſequence of theſe unhappy Circumſtances, to exulcerate the corroded Veſſels after a previous Spitting of Blood. This Weakneſs of the Veſſels is known by a ſlight Fever, a dry and gentle Cough, a preternatural Heat, an increaſed Redneſs of the Lips, Fauces, and Cheeks, appearing about the time the new Chyle enters the Maſs of Blood; by a Propenſity to Sweat, during Sleep; by a Weakneſs and great Difficulty of Breathing upon the ſmalleſt Motion. Thirdly, it appears at that Age, when the Veſſels, having acquired their full Growth, reſiſt the farther Efforts of the Fluids to lengthen them, whilſt the Blood, in the mean time, is increaſed in Quantity, Acrimony, and Impetus; ſo that it appears between the ſixteenth and thirty-ſixth Year of the Patient's Age, and earlier in Girls than in Boys; becauſe the former ſooner arrive

at their full Growth, than the latter. Fourthly, in an hereditary Diſpoſition to the Diſorder: What is ſaid under the Article FIBRA, compared with the Circumſtances juſt now mentioned, are ſufficient to explain, aſcertain, and prognoſticate the Nature, Cauſes, and Effects of Blood-ſpitting. Now, this Effect, or a Spitting of Blood, is brought on, and accelerated,

1. By an Interception of the uſual Evacuations, eſpecially of Blood, ſuch as the Hæmorrhoids, Menſes, or Lochia; a Suppreſſion of Hæmorrhages of the Noſe; and Neglect of uſual Veneſection, eſpecially in plethoric Habits, and thoſe who have loſt any of their Limbs.

2. By any great Violence or Force apply'd to the Lungs in Coughing, Crying, Singing, Running, violent Efforts of the Body, Anger, or any Wound inflicted, by whatever Cauſe or Inſtrument.

3. By acrid, ſaline, or aromatic Aliments; by Drink of the like Qualities; by a particular Manner of living, or by any other Diſeaſe, which have a Tendency to increaſe the Quantity, Acrimony, Velocity, Rarefaction, and Heat of the Blood. Hence it is, that this Symptom happens ſo frequently after acute Fevers, the Plague, the Small-pox, and Scurvy.

Hence it ariſes accompanied with a ſlight Pain, a moderate Heat, a Difficulty of Breathing, and an Oppreſſion of the Thorax. The Blood diſcharged from the Lungs is generally florid, ſcarlet-coloured, and frothy, full of ſmall Fibres, Membranes, arterial, venous, or bronchial Veſſels; a Cough, a Noiſe, or Rattling of the Lungs, a ſoft, ſmall, and undulating Pulſe, a Difficulty of Breathing, and a ſaltiſh Taſte in the Mouth, having preceded.

It is cured, firſt, by liberal Veneſection, repeated every third Day, for four times, till the inflammatory Cruſt entirely diſappears. Secondly, by refrigerating, inſpiſſating, ſtyptic, and lenient Medicines, long perſiſted in, and ſometimes intermixed with very mild Balſamics. Thirdly, by managing the ſix Non-naturals in ſuch a manner, as that they may be contrary to the Cauſes of the Diſorder already enumerated; and eſpecially by a moderate Regimen, and mild Aliments, continually perſiſted in, to which a Milk-diet peculiarly belongs. And, fourthly, by correcting the ſpecific Nature of the Cauſe, or particular Diſeaſe, which has produced it.

When a Spitting of Blood has happen'd, and is removed, the Patient is to have Blood taken from him every ſix Months for ſome ſucceeding Years; but the Quantity is to be gradually leſſen'd each time, that at laſt the Practice may be left off, without any Detriment.

But, if, in conſequence of the Violence of the Diſorder, the prepoſterous Uſe of Styptics, or a Neglect of the Method of Cure already preſcribed, there ſhould, after the Spitting of Blood, ariſe a continually increaſing Difficulty of Breathing, a wandering Horror, an Heat and Redneſs of the Cheeks, a dry and gentle Cough, a ſlight hectic Fever, a preternatural Thirſt, a Weakneſs and Senſe of Weight in the Thorax; theſe Symptoms import, that the Wound from which the Blood was expectorated, has already begun to change the Matter collected about its Lips, and under the Cruſt of dried Blood, into Pus; and this Collection is degenerating into a conceal'd Vomica, which, breaking, terminates in an open Ulcer of the Lungs.

This Collection of Matter, beſides the Cauſes already mentioned, alſo, ariſes from any Peripneumony terminating in an Apoſtem; which may be known from the Signs ſpecified under the Article PERIPNEUMONIA.

Beſides, an Empyema may corrode, waſte, and conſume the Lungs; in which Caſe, the ſame Diſeaſe is produced with that occaſioned by an Ulcer primarily formed in their Subſtance. This is known to be the Caſe by the Signs ſpecified under the Article EMPYEMA.

Hence 'tis obvious, what Signs diſcover an Ulcer of the Lungs, even of the conceal'd Kind; how many Cauſes and Sorts there are of ſuch Ulcers; and conſequently, how many different Kinds of Phthiſes, or Conſumptions, there may be.

Now the Effects of an Ulcer of the Lungs already formed, but concealed, and commonly called a *Vomica*, are generally theſe following: The Acrimony, Quantity, and Putrefaction of the Pus, are daily increaſed; the Membrane containing it is dilated, corroded, and macerated; the Blood-veſſels, and thoſe of the Bronchia, are converted into Pus; the whole Subſtance of the Lungs, or at leaſt, of one of their Lobes, is converted into a purulent Matter; the Patient is afflicted with a continual dry Cough, or ſuch an one as, only by the Concuſſion in Coughing, produces an Abraſion and Expectoration of the Spit; the Blood convey'd into the Ulcer, is converted into Pus; the Vomica in the Lungs ſpreads, and is propagated; then it breaks at laſt into the Ducts of the Larynx. Sometimes there is a ſuffocating Secretion, and ſometimes a daily and copious Expectoration, accompanied with a Cough of a Pus, which ſubſides in Water, is of a thick Conſiſtence, ſweet, pinguious, fetid, white, red, yellow, livid, cineritious, full of Strigments, and which, when put upon a live Coal, ſmells like ſtale roaſted Fleſh. Then the Vomica breaks into the Cavity of the Thorax. Hence the Reſpiration becomes highly difficult, and the Symptoms of an Empyema appear. Then the Reſpiration is moſt difficult; the whole Blood and Chyle are converted into Pus; the Preparation of the nutritive Juice is totally deſtroy'd; the Solids are almoſt totally conſumed; there is an hectic Fever, accompanied with a ſmall and languid Pulſe; an intenſe Heat of the ſuperior Parts; an Hippocratic Face, and a Redneſs of the Cheeks. There is an unaccountable Uneaſineſs, eſpecially towards the Evening, a preternatural Thirſt, profuſe Sweats in the Night, red Puſtules on the Face, Neck, and Breaſt, œdematous Swellings of the Hands and Feet, great Weakneſs, Hoarſeneſs of the Voice, a Falling of the Hairs, an Itching all over the Body, accompanied with watery Puſtules, a Griping, a frequent and weakening Diarrhœa, the Stools diſcharged in which are yellow, fetid, purulent, and cadaverous; a Suppreſſion of the Spit; and at laſt, Death.

Hence we may draw the following Rules:

1. An hereditary Phthiſis is the worſt of all, and not to be cured, but by preventing a Spitting of Blood.

2. A Phthiſis, ariſing from a Spitting of Blood, produced by external Cauſes, without any previous inward Defect, is, of all others, the mildeſt, if all other Circumſtances are alike.

3. A Phthiſis, in which the Vomica is ſuddenly broken, and the expectorated Pus white, well concocted, ſmooth, and in Quantity correſponding to the Largeneſs of the Ulcer, without Thirſt, but with a good Appetite, due Digeſtion, laudable Secretion and Excretion, is curable, though with Difficulty.

4. A Phthiſis, produced by an Empyema, is incurable: And,

5. A Phthiſis, accompanied with an Expectoration of heavy, ſolid, fetid, ſweet Spit, together with the Symptoms laſt enumerated, is to be deſpaired of.

When a Vomica is already formed in the Lungs, the Intention of the Phyſician ought to be, to maturate and break it with all Expedition; which is done by a Milk-diet, Riding on Horſeback, tepid Steams, and expectorating Medicines: And, when it is broken, it is requiſite,

1. To guard and defend the Blood againſt the purulent Contagion.

2. As ſoon as poſſible, to evacuate the Pus from the Ulcer, and to cleanſe and conſolidate its Lips. And,

3. To uſe ſuch Aliments as are of eaſy Digeſtion, that they may not only paſs through, but, alſo, be changed and duly aſſimilated by the remaining Force of the Lungs. They ought, nevertheleſs, to be capable of nouriſhing the Body, and unfit for generating new Pus.

The firſt of theſe Intentions is anſwer'd by mild and grateful acid and ſaline Medicines, vulnerary Herbs, and mild Balſamics exhibited in all Forms, in large Doſes, and long perſiſted in.

The ſecond Intention is anſwered by liquid and diuretic Medicines; together with ſuch as promote Coughing, whether internal or external; by Exerciſe, Riding, and the Country Air, which expel the Pus; by Abſtergents, and Balſamics, both internal and external, which depurate; and, laſtly, by conſolidatory Paregorics. And,

The third Intention is anſwer'd by Ptiſans, Broths, and a Milk-diet.

The palliative Cure of a Phthiſis principally regards the Cough, the Oppreſſions, and the Flux: And

Theſe Symptoms are remov'd by a proper Regimen, Opiates cautiouſly exhibited, and proper warm Liquors.

As a Phthiſis is moſt generally produced by an Ulcer of the Lungs, ſo it may ſometimes ariſe from an Ulcer of ſome of the other Viſcera, ſuch as the Liver, Spleen, Pancreas, Meſentery, Kidneys, Uterus, and Bladder; the Knowledge, Prognoſtics, Effects, total and palliative Cures of which may eaſily be deduced from what has been ſaid, by the Phyſician who knows the natural Effects of each particular Bowel. *Boerhaav. Inſtitut.*

The following Obſervations of Dr. *Bennet*, relative to the Subject of this Article, are of Importance ſufficient to deſerve Notice.

Omitting all Conſideration of that Moiſture, which, when it ſuperabounds in the Stomach, by the Aſſiſtance of the Oeſophagus, and the Membrane common to that and the Tongue, flows into the Mouth without Coughing or Hauking; as, alſo, that Rheum which ouſes out of the capillary Arteries, and their Coats, from the Brain upon the Palate, and ejected with the ſame Eaſe, the Nature of that Expectoration is to be examined, which proves injurious to the Breaſt. This is nothing elſe than a Portion of Fluid derived from the Blood by Suffuſion into the Cavity of the Thorax through the pectoral Arteries, and thrown up through the Trachea into the Mouth, in order to its final Ejectment, by the contractile Motion of the Lungs, either

in Coughing or Hauking. As the Blood, therefore, is conſtituted in Conformity to its Aliment, ſo the Matter of this Excretion is as the Blood, from which it is derived. The Truth of this will appear, upon conſidering the Manner of this Excretion, and the Largeneſs of its Quantity, in thoſe who are not troubled with a Defluxion from the Brain upon the Trachea.

Whoever ſhall uſe proper Medicines for purifying the Blood, although Pectorals be omitted, yet the Matter expectorated will become better, in proportion to the Rectification of the Maſs of Blood. Thus, when the State and Colour of the Matter is bad, if ſuch Sweats be promoted, as ſerve to clear the Blood from its Impurities, the Matter brought up will mend, in Conformity to the Blood's Depuration.

That the Pulmonary Artery, with its Ramifications, receives the Recrements of the Blood, and thence detaches them into the Branches of the Windpipe, is a matter beyond all Diſpute: Some are more, and ſome leſs, affected with this Lodgment, according to its Nature and Quantity; and ſooner or later diſcharge it by Expectoration; according to the Circumſtances of its Adheſion. Every body has not the ſame Freedom in the Organs of Breathing: Some are fatigued with a ſevere Cough without any Expectoration; whilſt others, with a ſlight Hauking or Coughing, diſcharge the irritating Matter. Some have it ſo much diluted with *Ichor* or *Serum*, that the Lungs endeavour in vain to bring it up; others have the Defluxion ſo hardened into Clots, that it yields with great Difficulty. Some, through a cold Laxity of the Breaſt, can evacuate but little Matter; while others, of a firmer and warmer Conſtitution in the ſame Parts, diſcharge it with little Uneaſineſs. Some, by the Freedom of the Motion of the Lungs, when they do not adhere to the adjacent Parts, eaſily expel the Matter, while others, either through Plenitude or Conſtriction, natural or adventitious, have ſuch a Diſlodgment either retarded, or rendered impracticable.

In Expectoration, the Matter that ſettles about the upper Parts of the Trachea, is evacuated with little Labour of Hawking and Coughing; but what is deeply ſituated is with great Difficulty expelled.

Matter of a moderate Conſiſtence is eaſily expectorated; but when it is too thin, or formed into hard Clots, it is not diſlodged without great Trouble and Difficulty.

Nature then carefully conſults her own Security, when the Matter, in Phthiſical Patients of a more healthy Conſtitution, is ſupplied from the Blood, and when the Times of Formation and Expulſion are determined. For, when crude, it cannot be naturally or ſpontaneouſly diſcharged; but it is prepared for Evacuation, when it comes to Maturity, and is, as it were, ſhaped to the Capacity of the Veſſels, through which it is to paſs. Thoſe who are accuſtomed to this ſort of Expectoration, are under the ſalutary Directions of Nature, to which the Means are to be accommodated; but if the Matter be interrupted in its Courſe, ſo that it does not proceed according to the Inclinations of Nature, it occaſions a Neceſſity for more vigorous Efforts. The Treatment, therefore, of ſuch Patients is a Matter of great Importance.

Whoever attempts to haſten Expectoration by violent Exerciſe, or any voluntary Anticipations of Hawkings, extremely fatigues the Contents of the Thorax; when Nature at her appointed Time would eaſily have relieved them. Thoſe who expectorate the Rheum freely and copiouſly, will ſoon find themſelves eaſed of the Burden upon the Lungs. On the contrary, at the Beginning of a Cough, every thing is difficult and fatiguing; but in its Progreſs, as the Matter ripens, every thing becomes eaſier.

In my Opinion, the white frothy Spit is produced by a thin ſort of Rheum, ouſed out into the Lungs or Fauces, and there agitated. For a Defluxion, proceeding from a Coldneſs of the Brain, is thicker, and, unleſs it be retained and agitated ſome time in the Mouth, is not ſo white, is more mucous, and froths not up ſo much into Bubbles; whence it ſeldom or never hurts the Lungs; but, if it froths, I believe it proceeds from ſome Motion of the Parts, from Heat, and a Mixture of Air. Beſides, if this Matter riſes unmixed, it indicates no more, than that there is ſome internal Exſudation, occaſioned by a more vigorous Action of the Parts than uſual.

A frothy Spittle is increaſed by Exerciſe, in thoſe eſpecially who perſpire but little; and that the Motion of the Mouth and Lungs conduces to it, is manifeſt, becauſe it always happens to thoſe who cough or talk much.

This Spittle is very light, conſiſting principally of a watery Pellicle inflated with Air.

Nature has given the ſame Laws to Plants, and to Animals; and, according to *Hippocrates*, implanted in both what is ſour, bitter, ſweet, ſalt, and of all Taſtes. Nor does the Microcoſm want its inſipid Fluids, a moderate Proportion of which is neceſſary to dilute the Blood; but, if a Superfluity be contained in the Veſſels, it loads the Conſtitution, as does that which is extravaſated, if it collects upon particular Parts, eſpecially the Organs of Reſpiration. But at preſent it is of no great Importance, whether ſuch inſipid Humidities collect in their proper Veſſels, or are thrown upon them after the Diſcharge of their proper Offices, ſo that they have been circulated with the Blood, and are found inſpiſſated upon Protruſion into the large Cavities of the Body. The Excretions, however, which conſiſt of a mild Humour, are more troubleſome than dangerous; but thoſe which do not readily paſs into the Trachea, in a liquid Conſiſtence, harden into a thick viſcid Conſiſtence, and are expectorated with great Difficulty.

A Lady of forty-ſeven Years of Age, fleſhy, but valetudinary, who had all the Capillaries in the Liver, Spleen, and Meſentery, obſtructed, was frequently affected with unequal Shiverings, attended with a Coldneſs, in one or other of the Parts, which ſeemed to her to reſemble the pouring on of cold Water; which Symptoms, notwithſtanding our Endeavours, continued; but when a Ptyaliſm, or Diarrhœa, aroſe, it then ceaſed. At laſt, after the Exhibition of ſome Cathartics, by ſweating in dry Baths, and a ſparing dry Diet, ſhe was quite cured.

In many Perſons, a thin Lymph ariſing from the Blood is at firſt copiouſly diſcharged upon the Trachea, upon which the Coldneſs will diſappear; but the Spit will then grow thick, pellucid, and be evacuated with violent Reaching. With this Matter we have often obſerved the Breaſt to be extremely obſtructed.

Pleuritic Patients, after the purulent Matter has been expectorated, caſt up Spit of this kind for ſome Days; and the more the other Veſſels are affected with it, the leſs will the Organs of Reſpiration be obſtructed by it; and not at all, when it is tranſlated upon the Bowels. I am of Opinion, that this Mucus, being unequally ſupplied from the Blood, ſerves in the place of Nouriſhment to thoſe who have the Rickets; and I take it for granted, that the ſame, ſtagnating in the Ureters, and hindering the Paſſage of Urine, regurgitates into the Stomach and Bowels, and occaſions Pains of the Back, Vomiting, Gripes, and a baſtard Iſchury. It is ſometimes to be obſerved, that the like Viſcoſity hinders the Circulation of the Blood, by lodging in the greater Veſſels. An Inſtance of this I once met with in a Child, who was taken off in the third Fit, it having obſtructed the Pulmonary Artery, or that which is called the Arteria Venoſa. Laſtly, if theſe thick Rheums are unequally depoſited upon ſome of the extreme Parts, they generate œdematous Swellings; but if upon the whole Habit, an univerſal *Oedema* or a *Leucophlegmatia*, and an *Anaſarca*, very difficult to be cured.

This Mucoſity, which is the Cauſe of obſtinate Obſtructions in the Bowels, increaſes in the Female Sex, or in Men of a cold Temperature; and even in a State of Recovery, where the natural Heat is defective, or is waſted, and grown languid, by the long Continuance of any Diſeaſe.

Of Yellow-coloured Spit.

Yellow Spit is probably derived from the bilious Juice, the Blood being ſo weakened before Secretion, that it is, at leaſt, deprived of its Taſte. Salts make Ulcers by Eroſion, ſo putrefying Bodies by penetrating, inciting, and raiſing the Parts into a Tumor; but I have always been of Opinion, that ſaline Seroſities prepare the way for Putrefaction, by too much relaxing and ſoftening the Parts; but both together make an internal compound Ulcer, which cannot be cured without great Difficulty. It is not ſurpriſing, that a Fluid, otherwiſe thin, clear, and agreeable, while it flows in the Blood-veſſels, ſhould be changed into a yellow Colour; for, as the Blood, at its Source, and before it is diſtributed into its proper Veſſels, is deſtitute of Tincture and Conſiſtence, ſo the Spit, which is its Recrement, is changed by the Alteration of Heat in the Parts thro' which it paſſes, and retains no diſtinguiſhing Quality that it poſſeſſed, whilſt it was carried about in the Circulation. It is ſtill leſs ſurpriſing, that yellow Spit ſhould loſe its Taſte, when it has not only been blended with the whole Maſs of Blood, but ſtrained, alſo, thro' the fleſhy Subſtances of the Parts, and the Pores of the Membranes; for that Subſtance in which its Bitterneſs conſiſts, may not be able to penetrate through ſuch fine Strainers.

The whole Maſs of Blood is impregnated with Bile, or bitter Particles, which ſerve to preſerve it. However, no Part of that, or of any other Fluid of the Body, is ſo affected with Bitterneſs, as to communicate, by the Tongue and Palate, any conſiderable Senſation to the Nerves, except that Part ſecreted from the common Maſs, which is of a remarkable bitter Taſte, and is diſcharged in extreme Vomitings, when it is drained from its natural and appointed Receptacle.

In Phlebotomy, when the Blood happens to fall upon the Skin, it commonly feels hot; and yet the Heat of this Blood, whilſt

whilſt in the Veſſels, might, as far as could be conjectured, be moderate and benign.

Once, in a diſſected Subject, I ſaw the Neck of the Gall-bladder filled with Tophs; but the Bladder itſelf was filled with a pellucid Lymph, ſtrained through thoſe Tophs, as through a Filtre of a thick Contexture. Theſe Tophs reſembled candied Coriander-ſeeds; but the Lymph was inſipid, and coagulated upon the Fire into a Mucilage like the White of an Egg.

Theſe yellow Excretions are not produced, except by a continued Incaleſcence of the Blood, or by an Heat concentrated by Cold, or from a Corruption or Redundance; which different Cauſes may be known by Phyſicians from the Nature of the Complaints of the Patient.

That ſome Portion of this yellow Humour penetrates through the Skin under the Arm-pits in ſweating, appears from the Linen.

The conſiſtent fleſhy Subſtance of none of the Viſcera could give the Blood its red Colour, without the Aſſiſtance of a proper Heat; but the Spit owes its Subſtance, and Variations of Colour, to the Blood, and Juices of the Viſcera, and alſo, to the Aliments. The moſt remarkable Sorts of Spit, that frequently occur, are *the bluiſh, the ruſt-coloured, and blackiſh*; which, are not, as many imagine, produced by what is drawn in with the Breath, either by the Noſtrils or Mouth; but from a Taint lodged in the Viſcera and Veſſels, and formed, perhaps, in the Spleen, its principal and peculiar Laboratory: This Taint, being received into the Blood, is expelled in the Courſe of Circulation. But I do not imagine, that it receives its deep Colour immediately, as it is diſcharged from the Veſſels; but as it muſt diſtil from the ſuſcipient Viſcera and Veſſels, where it condenſes, there it is endowed with its dark Tincture. However the Degrees of Heat, in themſelves, are not the effectual Cauſe of the different Colours; yet, where they increaſe or diminiſh, the Spit is more or leſs coloured. But for theſe Diverſities which I have enumerated, an Heat more gentle, but of longer Continuance, is requiſite.

Expoſe to the intenſe Heat of the Sun, or of a culinary Fire, a Portion of bluiſh Spit, and it will immediately change to a white Colour; which would not happen, if the bluiſh Colour proceeded from any Mixture of extraneous Particles, drawn in with the Breath. This bluiſh kind of Spit has, I believe, never been obſerved to be of a thin Conſiſtence, but always mucilaginous.

This Species of Expectoration is increaſed by exhibiting things that cool the Breaſt, as Barley and Apples; but is leſſened by the Uſe of ſudorific or mercurial Medicines. Thoſe, alſo, ſpit but little, whoſe natural Heat has been much exhauſted by long Sickneſs; thoſe who are accuſtomed to ſlender Diets, Exerciſe, and Faſting; thoſe who have the Breaſt of an hot Temperature, or who are much uſed to Smoaking; and thoſe who are agitated with frequent Coughing. Whence it appears, that the Matter of this ſort of Expectoration is formed by a more gentle Heat, and longer Concoction, and by a Breaſt of a cold flaccid Temperature.

I remember an Inſtance of this kind, in a middle-aged Woman, under a violent Catarrh, whoſe Spleen ſo filled the Head with noxious Vapours, that every Morning ſhe diſcharged a vaſt Quantity of a Ruſt-coloured Spit, which reſembled the Threads of a Cobweb; a Portion of which was ſometimes diverted, by the hot Catarrh, into the upper Part of the Aſpera Arteria; but, upon opening and deterging the Veſſels of the Spleen, both the Catarrh and Excretion ceaſed.

If the White of an Egg be long, though gently, kept warm, it will change its white into a bluiſh Colour.

At the End of a Fit of accidental Coughing, from Congeſtion, or of a thick periodical Expectoration, I have obſerved this ſort of Spit to riſe more white and depurated; and I have obſerved, that ſuch Kinds generally proceed from Diſorders of the Spleen or Womb; nor does the Mucus of the Noſe become diſcoloured from any other Cauſe.

Though a ſalt Spit is produced by a ſalt Blood, and may give ſome Commotion to the Humours, yet I imagine, that it ſeldom burſts the Membranes and Coats of the Veſſels by its inciſive Quality; but, after the Blood has ſtrained out its ſaline Serum, like a Dew, through the Membranes and Coats of the Breaſt, it occaſions a Cough, by ſtimulating the contractive Motion of the Lungs. By this ſudden Concuſſion and Contraction, the tender Parts, through which the ſaline Particles of the Blood are conveyed, being rendered weaker, are ſoon corroded. So that the ſaline Particle, lodged upon any of the Viſcera, does not immediately, like a Needle, penetrate the Part itſelf; but, by remaining long upon it, it diſſolves its Texture, and aſſimilates it to its own Nature; ſo that this Effect rather proceeds from a Power of Solution, than of Inciſion; for, by inſinuating into the very Subſtance of the Part, it is mixed and united with its moſt intimate Combinations, and ſo changes its Subſtance into a kind of middle State between Mixture and Diſſolution: When it has continued in this neutral State ſome time, it, at laſt, diſſolves, and is, by an induc'd Friability, entirely deſtroyed. Thus, if a ſaline Fluid be extravaſated, perhaps, like a Vapour, and depoſited upon a particular Part, by its penetrating Acrimony, it intimately unites with the Subſtance of the Part, and endangers its Corroſion and Diſſolution. And if the acid and ſaline Particles ſhould even be depoſited on the extreme Parts, great Trouble and Danger are occaſioned to the Patient.

Many whoſe pectoral Veſſels have been burſt by a turgeſcent Blood, perhaps of a ſaline Nature, have been cured by uſing Phlebotomy once or twice; but I have known none whoſe Lungs have been corroded, that could be recovered without an entire Edulcoration and Change of the Maſs of Blood.

Some have been affected with Luxations of the Vertebræ, by an acrid Defluxion upon the Spine; and I have, alſo, ſeen the Joints of other Bones diſtorted by the ſame Means. But if the Qualities of the Fluxion are entirely offenſive to Nature, as in the Venereal Diſeaſe, Protuberances will be raiſed on the Bones, eſpecially the Tibia; and they will be entirely render'd friable, ſpongious, and ſoft. The ſame Caſe happens in the Elephantiaſis. And, if we may believe ſome, the Bones are ſo diſſolved, as to become flexible, like Wax.

I have ſeen many almoſt entirely emaciated, whoſe whole Maſs of Blood abounded with Salt; and who uſed, periodically, to expectorate a briny Matter, diſcharged into the Breaſt from the pulmonary Veins, which, however, has not corroded the Lungs. Among theſe, I knew a Merchant of *London* almoſt reduced to a Skeleton, in whom the ſaline Matter was tranſlated from the Lungs into the Palms of the Hands, Feet, and Ancles, where it produced moſt malignant conſuming Ulcers, whilſt the Lungs continued entire.

I have, more than once, ſeen the conſtituent Subſtance of the Lungs ſo uniformly diſſolved, that they ſeem'd reduced into a kind of putrid Mud.

I have, alſo, met with Patients, whoſe Lungs have been torn away in pieces, by a ſharp and unequal Corroſion; and appear'd, upon Diſſection, as if they had been gnaw'd by a Rat. A redundant Acrimony of the Blood, which is frequent in melancholic Habits, not only occaſions a general Tenderneſs, but expoſes the Parts to ſuffer by external Injuries, and deſtroys the Nouriſhment of the muſcular Fleſh. And the Rheumatiſm, which is nearly related to the Gout, both in its Cauſes and Seat, produce very intenſe Pains.

The conſtituent Matter of all Spit is different, and aſſumes various Appearances, according to the Part from which it derives its Source; for the Serum of the Blood is not the only Matter which is tranſlated into the Cavity of the Thorax, but, ſometimes, that dewy Subſtance, which is deſtined for Adheſion and Nouriſhment, riſes into the Mouth. The Blood is firſt deprived of its thin Serum, and thereby becomes heated; and the Increaſe of this Heat throws its more glutinous Parts upon the Lungs, which have been already relax'd and weaken'd by the Tranſlation of watery Humours; and Patients, in this Situation, are, I think, in the greateſt Danger. For Nature greedily embraces this Juice, till her attractive and aſſimilating Qualities are entirely loſt.

When I practiſed at *Briſtol*, where Conſumptions are very frequent, I met with ſome who eaſily expectorated a ſweet Spit for three Months together, and were totally waſted and enervated: Some of theſe were ſeized with a violent Cough; and, having entirely loſt their vital Moiſture, they expired, pale, dry, and entirely emaciated. In one Inſtance of this Kind, who, for our Information, was open'd, and who, ſometimes, expectorated Blood after the ſaline Excretions of Spit, the Lungs had entirely loſt their Tone; and yet the other Organs of Reſpiration, and all the Viſcera, were ſound to Appearance. Nor is this ſurpriſing to thoſe who know how unfit Blood, that is too much attenuated, is for Nutrition; or who have obſerved too much, colliquated and rarefied by intenſe Heat, flow through the capillary Arteries, particularly of the Noſe, and produce Fainting. For it is inevitable Deſtruction to the animal Oeconomy to deprive it of that contemperating glutinous Juice, which, by a moderate Warmth, gives a due Smoothneſs and Conſiſtence to the whole Maſs.

This ſweet Spit, in all the Patients that I remember to have ſeen, happens after a tedious and generally ſaline Ptyaliſm.

This Spit, put upon the Fire, becomes of the Conſiſtence of a white Gelly, like other nutritious Juices.

Of all ſorts of Spit, the moſt vapid and feculent is of a cineritious dirty Colour, like moiſt Clay, which is, alſo, the leaſt adheſive, that is excreted by conſumptive Perſons, and is a Symptom of the Defect of natural Heat, and of the Approach of Death. All the other Sorts are, in ſome meaſure, affected by Warmth, and from it derive their Figures and Conſiſtences; this only ſtagnating in its Lodgments, can ſcarcely be expectorated unleſs forced up by the Greatneſs of its Quantity; it is produc'd by extreme Corruption, and natural Decay.

If you fill two Acorn Cups, of equal Bigneſs and Weight, one with the dirty Spit, and the other with any other Species, the dirty Spit will weigh down the other, as it is heavier than any of the other Sorts.

This Clay-like Spit happens only to thoſe who are haſtening to their latter End, and are out of all Hopes: Their Lungs, upon Diſſection, have been found only a Maſs of ſtinking Corruption. *Bennet. Theat. Tabid.*

OBSERVATIONS RELATING TO THE DIAGNOSTIC SIGNS.

The Approach of this Diſtemper may be diſcovered, when the ſaline Blood is carried towards the Breaſt with a ſlower or quicker Motion.

Its ſlower Afflux is diſcernible,

1. By bloody and ſaline Spittings, at ſtated Periods, about four, five, or ſix, in the Morning, or Afternoon, ſooner or later, and more or leſs, according to the Irritations they occaſion, or as they are determined by the Exerciſe of the Body. That which is inſpiſſated out of the Veſſels, is not excreted at the accuſtomed Periods, becauſe they abound in the Body at thoſe Times, as is the common Opinion of Phyſicians; but becauſe, in ſome meaſure, it tranſpires through the Skin, while the thicker Parts are deriv'd to the larger Veſſels.

2. By more frequent Spitting and Hauking.

3. By an Interception of the cutaneous and other Excretions.

4. By Spit of a light unequal Subſtance.

5. By globular Spit convolved like Hail-ſtones, and expel'd at the above-mention'd Hours, by ſudden Coughing or Hawking.

6. The Truth of theſe Symptoms is confirmed, when, from any Cauſe, there happens a Defluxion of a ſaline Matter upon the Joints or Extremities of the Body, and the Breath in that time gets Strength.

More violent and copious Affluxes are known,

1. By a more plentiful Expectoration of frothy Blood of a Clay-colour, with Hauking and Coughing, leſs painful, if from the Lungs; but of a blackiſh or reddiſh Colour, if from the Cavity of the Thorax; if from the great Arteries, it is attended with regurgitating Repletions of the Mouth at Intervals; but gradually, and with a Senſe of Titillation, if from the Fibres.

2. By an heavy Pain in the Breaſt, which is periodically pungent.

3. By a periodical Difficulty of Breathing.

4. By a manifeſt Relief of the other Parts.

The Signs of a Phthiſis from a thick and cold Phlegm, falling from the Head, and collecting in the Breaſt, is apparent, when the like Matter being ſecreted, in ſome manner, at the Extremities of the Carotid Arteries, and contaminated by a cold Brain, makes its Way into the Aſpera Arteria, which is always accompanied with the Diſcharge of a ſimilar Matter into the Thorax from the common Veſſels; of which a diſtinguiſhing Symptom is an Erection or Opening of the Larynx, with its alternate Cloſure, or falling again, and cauſing a Sound like the Ticking of a Watch beating Seconds, to which daily are joined the following Symptoms.

1. A Torpor of the Spirits.

2. An Heavineſs of the Head, with Pain, increaſing periodically at the full Moon.

3. Longer Sleeps, with Dreams of Drowning.

4. A general Coldneſs of Temperature.

5. The Pores contracted with Cold.

6. A Flaccidity of the Lungs, and all the pectoral Muſcles, and a ſlow Expectoration, which is known by a frequent Endeavour to hauk up ſomething in vain.

7. A thicker Spit, which is eaſily evacuated after a good Meal, when the Breaſt has been warmed with ſuitable Food.

8. An heavy and oppreſſive Pain of the Breaſt.

9. A Cough which, at Intervals, threatens Suffocation, and is aggravated by Exerciſe, and drinking cold Liquors.

10. A frequent Difficulty of breathing.

11. A Catarrh ſlowly, but continually, moiſtening the Aſpera Arteria.

12. Difficult Expectoration in a cold Air, but a Readineſs to ſweat.

13. The Fleſh becomes flaccid and ſoft in a moiſt State of the Air, and hardens in dry Weather; which is a Symptom that almoſt always attends a conſumptive Patient. Whence,

14. A Diſpoſition to be affected with every Inclemency of Air or Wind; the moiſt, or cold, being moſt injurious.

The Signs of a Phthiſical Conſumption, from what Source ſoever derived, but deeply rooted, and eluding all the Art of Medicine, with regard to a perfect Cure, are,

1. A ſevere Cough, the Violence of which ſtreaks the Spit with Blood; then a naſty Pus of a cineritious Colour, which, put into Water, eaſily mixes with it, and falls to the Bottom; there are, alſo, expectorated Fragments torn off from the Lungs themſelves, the Veſſels, and Membranes.

2. A fetid Breath, and the greateſt Difficulty in Reſpiration.

3. A Pain of the Breaſt, and a pricking Soreneſs of the Nipples; eſpecially in the time of Coughing.

4. A Defect in all the Functions.

5. A putrid Fever from the Blood, univerſally tainted by the Pus, and inducing preternatural Motions, as Fermentation: Whence the Fluids of the Body are diſcharged by colliquative Sweats, eſpecially in the Morning.

6. A Diarrhœa, and at laſt, a Lientery, occaſioned by a weak State of the Liver, and all the Parts ſubſervient to Nutrition.

Theſe are neceſſarily attended with,

7. A Drineſs of the Fleſh, from the Defect of a due Degree of Moiſture.

8. A Scurf upon the Extremities, and whole Epidermis, from the ſame Cauſe.

9. A Pain accompanied with Tenſion, in lying down on the Right or Left Side, occaſion'd by the Adheſion of the Lungs to one Side or other of the Pleura.

10. A weak, ſmall, and frequent Pulſe, from a languid Motion of the Blood to the extreme Parts.

11. A ſhedding of the Hair, and the Nails dead-coloured and hooked.

To which, laſtly, may be added,

The *Facies Hippocratica*, or the very Image of Death; the Face ghaſtly, the Eyes ſunk, the Noſe pinch'd, the Cheeks hollow, the Temples collapſed, and the whole Body ſtiff, and reſembling a Skeleton.

A Fluxion, of whatever kind, from the whole Body into the Breaſt, is more dangerous than one from any particular Part.

A Fluxion from a Stagnation of the Blood, or a Diminution of its Motion near the Heart, is more dangerous than one proceeding from a more diſtant Part.

There is leſs Danger from Blood guſhing by fits into the Breaſt, than when it flows ſlowly and conſtantly; for though there is a greater Flux upon a periodical Bleeding, there is a time of Refection.

Extravaſation of Blood from Redundance and Tenſion is much more eaſily cured, than one proceeding from its Diſtemperature and Acrimony.

There is greater Danger to the Lungs from the Preſſure occaſioned by an Obſtruction in the Liver, than from a Regurgitation by the broken Veſſels.

If a Spitting be critical, and from Tranſlation, it often goes off with Safety and Advantage.

Thoſe who have had the Pulmonary Veſſels continually enlarged, by the Afflux of Blood, and Expreſſions of viſcid Matter, accompanied with an Aſthma admitting of no Remiſſions, have moſtly, either, by a Rupture of the Lungs, thrown up Blood into the *Trachea*, mixed with ſordid Matter; or have died with a ſudden Aggravation of the Aſthma.

In all Fluxions, if, upon the Uſe of Remedies, the Intervals are lengthened, and Paroxyſms remitted, it promiſes Recovery, and *vice verſa*.

A larger Intermiſſion, between milder Fits, is ſtill more encouraging.

Phthiſical Patients bear long, and eaſily, the Afflux and Expectoration of mild watery Humours; but of bilious Excretions, with Difficulty, and for a ſhort time; but by a Diſcharge of thick, ſaline, fetid Matter, they are immediately deſtroyed.

From a Suffuſion there is the greateſt Danger, but from an Inſtillation the leaſt.

Thoſe who are crooked, and have had Limbs cut off, are moſt ſubject to Fluxions, and in greateſt Danger from a Phthiſis.

After the Spitting of Blood has ceaſed, if the Lungs are leſs ſenſible, or the torpid State of the Parts prevents a total Diſcharge, the Putrefaction of the retained Blood, and of the Lungs themſelves, will endanger a Phthiſis.

A free Reſpiration, a Ceſſation of Coughing, and a Continuance of Strength, after Bleeding, are good Symptoms, and *vice verſa*.

If after Blood-ſpitting, a mucilaginous, blue, and light Spit ſucceeds, and if it continues, it foretels a Return of the *Hæmoptyſis* in young and hot Conſtitutions; but, if purulent, a Phthiſis, both to Young and Old; if none at all, and other Circumſtances be favourable alſo, it denotes Recovery.

Spitters of Blood are moſt uneaſy in Snow, Hail, or Rain.

The Bronchia are leaſt obſtructed by an extravaſated Blood, that putrefies; by a nutritious Juice, when it becomes mucilaginous, more; and moſtly by Phlegm falling down the Trachea, if it be concocted into a tough Viſcidity.

Laſtly, if the Organs of Reſpiration retain Matter, of any Kind, long upon them, it forebodes a difficult Cure.

That Languor which ſlowly ſteals upon conſumptive People, without any Decay of the Lungs, or other Bowels, is moſt dangerous to *Engliſh* Conſtitutions; and, unleſs Remedies immediately take Place, which they ſeldom do, is mortal.

A Phthiſis which ſinks a Perſon ſuddenly, when attended with Coldneſs of the Extremities, eſpecially of the Feet, is moſt dangerous, although it does not ſo ſeverely affect the Lungs; for it is a Symptom, that the nutritious Juice is very much vitiated, and the Strength exhauſted.

Phthiſical Patients are in a moſt deſperate State, who have ſtony and oſſeous Concretions of unequal Surfaces lodged upon their Lungs.

In thoſe who are accuſtomed to Intemperance, if they are ſeized with a Phthiſis productive of Languor, they are in the laſt Extremity of Danger.

A copious and frequent Flux of Matter upon a corroded Part is dangerous; for internal Ulcers are ſeldom cured when they emit a plentiful Diſcharge of Sanies, as thoſe externally are hardly ever healed.

Perſons of lax Habits, though they ſooner droop and languiſh, yet they ſooneſt feel the Benefit of Medicines, if they be timely applied at the Beginning of the Diſeaſe.

Thoſe who are phthiſically inclined, and frequently ſpit inſipid Matter, are longer in waſting, although from the Beginning the Lungs were affected.

Thoſe who labour under an hereditary Phthiſis, though they are incurable, yet their Life may be of ſome Continuance.

The Lives of Phthiſical Patients are prolong'd by frequent, but moderate, Hæmorrhages at the Noſe.

The Danger of an Effuſion of Blood from the Pulmonary Artery is leſſened, when it is attended with an Hæmorrhage from the Noſe.

If, after a protracted Phthiſis, there appears a chylous Flux, it is a fatal Symptom.

If an Ephemera, or Hectic, often returns at unequal Periods, it indicates diſmal Conſequences.

When Phthiſical Patients have a keen Appetite, and acquire no Strength from their Food, their Caſe is deſperate; for it ſhews, that the vital Juice is degenerated to a corroſive Fluid.

When Virgins, who are pretty far advanced, but never had the menſtrual Flux, are affected with a Phthiſis from a Tranſlation of the menſtrual Matter to the Breaſt, it produces a moſt diſmal Alteration, and a ſudden Waſting, which are followed by Death.

If a Contraction of the Noſtrils, a Straitneſs and Sinking in of the Breaſt, happen ſuddenly, they prognoſticate immediate Death.

Oedematous Swellings of the Feet, in a Phthiſis of long Duration, is a mortal Symptom.

Almoſt all Phthiſical Patients periſh, who are ſeized with a putrid or malignant Fever, occaſioned by the Taint of the Matter lodged in the Breaſt.

When a freer Reſpiration is obtained by the Aſſiſtance of Remedies, and a Change of Air, then the Patient feels himſelf enlivened, his Strength is increas'd, and his Colour becomes florid; laſtly, Health returns, and the vital Heat is rekindled all over the Body.

When, in Phthiſical Patients, a copious Diſcharge of ſlimy and ſaline Sordes is procured by Cathartics, the Breaſt is greatly relieved, and there appear Hopes of a Recovery.

If Pectorals of a thin Subſtance, which ſtimulate, are exhibited in a long-continued Phthiſis, without exciting a Cough, the Sign is fatal.

If, by the Aſſiſtance of Art, the ſpit, which was variegated, be brought to one Colour; if from naſty it becomes depurated; if, from having an unequal Surface, it becomes ſmooth; from ſaline, inſipid; from fetid, inodorous; and laſtly, if it be eaſily expectorated; all theſe are Signs of Recovery. *Bennet Theat. Tabid.*

PHTHOE, φθόη The ſame as PHTHISIS.

PHTHOIS, φθοῖς. A Paſtil, or Troche.

PHTHORA, φθορά. Corruption. In *Hippocrates*, it imports a Miſcarriage.

PHTHORIAS. An Epithet of a Medicine producing Abortion.

PHTHOROPOEOS, φθοροποιός. Deleterious, or deſtructive.

PHU. A Name for ſeveral Species of *Valeriana*. It generally imports the Garden *Valerian*.

PHUSCA, φῦσκα. The ſame as *Poſca*. There are ſeveral compound *Poſcas* deſcrib'd by *Aetius*, *Tetrabib.* 1. *Serm.* 3. *C.* 80, 81. and by *Paulus Ægineta*, *L.* 7. *C.* 11.

PHYCIS, *Phycida*, *Fuca*, a Sea-fiſh reſembling the Sea Perch, with a long ſharp Snout, thick Head, large Teeth, and his Body covered with Scales. It is of ſeveral Species and Colours, and is taken among the Sea-weeds near the Shore, in the Sand and Mud, where it brings forth its Young; it is good to eat, and eaſy of Digeſtion; purifies the Blood, and provokes Urine. *Lemery des Drogues.*

PHYGETHLON, φύγεθλον, is a broad, but not much elevated Tumor, in which there is ſome Reſemblance of a Puſtule. The Pain and Diſtention with which it is attended, are violent, and greater than in proportion to the Bigneſs of the Tumor; and ſometimes there is a ſmall Fever. This Tumor is ſlow in ripening, and is not much converted into Pus; it generally riſes in the Neck, in the Armpits, and in the Groins. Our Countrymen call it *Panus*, from ſome Similitude in its Figure [ſpoken with relation to *Panis*, a Loaf of Bread]. *Celſus*, *Lib.* 5. *Cap.* 28.

In the Account above given, *Celſus* deſcribes a bilious Tumor, agreeably to what *Galen* ſays of it, *Lib.* 2. *ad Glauc.* "An inflammatory Eryſipelas, or an eryſipelatous Inflammation, is "called a *Phygethlon*." The ſame Author, in other Places, reckons this Tumor among Inflammations and Affections of the Glands; and diſtinguiſhes it from other Tumors by its Heat, and ſpeedy Generation; and ſays it ariſes in the Armpits, and in the Groins, from an Inflammation of the indurated Glands in thoſe Parts. *Foeſius.*

PHYTICA. A Name for the ALATERNUS.

PHYLLIREA. The ſame as PHILLYREA.

PHYLLITIS. A Name for ſeveral Sorts of LINGUA CERVINA.

PHYLLON. A Name for the *Mercurialis*; *fruticoſa*; *incana*; *teſticulata*.

PHYMA, φῦμα, from φύομαι, to grow, or be generated from, in its general Signification, comprehends all Kinds of preternatural Tumors, in whatever Part of the Body they appear; and eſpecially ſuch as affect the external Parts, and Superficies of the Skin, and ariſe without an external Cauſe, and are generated, increaſed, inflamed, and ſuppurated, in a ſhort Period of Time. *Galen*, *Com. in 6 Epid.* Agreeably to this Deſcription, thoſe Eruptions of Tubercles, which are generated of vicious Juices, and excited by an heated Blood, are called *Phymata*, 2 *Aph.* 15. 3 *Aph.* 20. and *Lib. de Alim. Phymata*, φύματα, are, alſo, Inflammations of the Glands, which ſuddenly break forth, and haſten to a Suppuration, *Gal. Lib.* 2. *ad Glauc. & Paulus*, *Lib.* 3. *Cap.* 22. and are reckoned among Affections and Inflammations of the Glands, *Lib. de Tum. præternat.* differing from a *Furunculus* only in Hardneſs. In *Prorrhet.* 2. we alſo we meet with τὰ χοιράδια φύματα, "ſcrophulous Tumors," incident to Children. φῦμα ſometimes ſignifies an Abſceſs, or vitiated Juices lodged in ſome Part of the Body; as 4 *Aph.* 44, 45. & 7 *Aph.* 65. & *Coac.* 118. So *Celſus*, *Lib.* 2. *Cap.* 7. renders φύματα, from 4 *Aph.* 44. by *Abſceſſus*. φῦμα, alſo, takes the Signification of ἔμπυημα, and every Inflammation which is converted into Pus, as 7 *Aph.* 8. according to *Galen*'s Comment on the Place. So we read of φύματα ἔμπυα, *Prorrhet.* 2. And, *Coac.* 404. we read of *Phymata* in the Lungs diſcharging Pus, which are oppoſed to hard and undigeſted *Phymata*. *Celſus* renders φύματα, ſometimes, *erientia Tubercula*, and ſometimes *Tubercula*, as in *Lib.* 5. *Cap.* 18. & 28. *Seneca de Beneficiis* renders φῦμα by *Tuber*, where he relates, that a Perſon had a *Tuber* opened by the Sword of a Tyrant, who aimed to take his Life. *Pliny*, relating the ſame Story, calls it *Vomica*.

PHYMATA, in *Celſus*, *Lib.* 2. *C.* 8. ſeems to imply a Caruncle in the Urethra.

PHYMOSIS. The ſame as PHIMOSIS; or as PHYMA. *Blancard.*

PHYMUS. The ſame as PHYMA. *Blancard.*

PHYPELLA. The ſame as PANUS.

PHYRAMA, φύραμα, from φυράω, to mix, is a Species of Ammoniacum, ſo called from its being mixed with Earth, Sand, and Gravel. *Gorræus.* See AMMONIACUM. But it ſignifies any Maſs whatever, moiſtened with a Fluid, and worked.

PHYSA, PHYSE, φύσα, φύση, ſignifies a Flatus, or groſs Wind in the Body, or the fetid Wind diſcharged by the Anus, according to *Erotian*, from ſeveral Places in the Aphoriſms, and from 1 *Epid* where we read of φύσαι σιγώδεες (*Phyſæ ſigodees*) and ψοφώδεες (*pſophodees*) Flatuſes diſcharged with and without Noiſe; the Word bears the ſame Senſe in the *Prognoſt.* and *Coac.* Φύσα, alſo, is very often uſed by *Hippocrates*, to ſignify a groſs Wind, or Flatulence, collected in any Cavity of the Body. Thus, *Lib.* περὶ παθῶν, he ſays, that Meats, light of Digeſtion, generate no Flatulences (φύσας); and, *Lib. de Flatibus*, it is ſaid, πνεύματα δὲ τὰ μὲν ἐν τοῖσι σώμασι φύσαι καλέονται, τὰ δὲ ἔξω τοῦ σώματος ἀήρ. "The Winds which are in Bodies, are called *Phyſæ*; thoſe with-"out the Body, Air."

PHYSALIS. The Hop, or rather its Flowers, which are boiled in Beer It is, alſo, a Name for the ALKEKENGI. *Blancard.*

PHYSALOS. The Toad. *Blancard.*

PHYSEMA, φύσημα. The ſame as PHYSA. It, alſo, ſignifies the Reſin of the Fir.

PHYSESIS. The ſame as PHYSA; that is, an Inflation.

PHYSICA REMEDIA are Remedies which do Service without any manifeſt Reaſon.

PHYSINX, φύσιγξ, is a little Bladder; but σκορόδου φύσιγξ, in *Hippocrates*, *Lib. de Fiſtulis*, is the Stalk or Stem of Garlick, which he uſes inſtead of a Probe for ſearching the Depth of a Fiſtula. *Galen*, in his Exegeſis, where we read φύσιγρα (*Phyſigra*) corruptly for φύσιγγα (*Phyſinga*), as, alſo, in *Varinus*, makes the *Phyſinx* to be what we call the Stalk, and eſpecially its Cavity. The Scholiaſt of *Ariſtophanes* makes the *Phyſinx* to be the outer Rind of Garlick; and ſo does *Erotian*, on *Hippocrates*, contrary to *Galen*, tho' with relation to the ſame Place. *Heſychius* makes the *Phyſinx* a Species of Garlick, or an Head of Garlick: Whence ſome, by *Phyſinx*, in *Hippocrates*, underſtand an Head or Clove of Garlick, and expound it by a Probe with a Button at the End of it, in the Figure of a Clove of Garlick; but *Hippocrates*, in that Place, directs the Uſe of a freſh Stalk of Garlick in the Search of a Fiſtula. Some, for φύσιγρα, in the Exegeſis, read φύσητα, (*Phyſeta*) others φύσηρα (*Phyſitra*).

PHYSIOGNOMIA, φυσιογνωμία. The Art of judging of a Perſon's Nature, Fortune, or Diſorders, by the Lineaments of his Face; from φύσις, Nature, and γινώσκω, to know.

PHYSIOLOGIA, φυσιολογία, from φύσις, Nature, and λέγω, to treat of Phyſiology. That Branch of Medicine, which conſiders Nature, with reſpect to the Cure of Diſeaſes, particularly the human Body, its Parts, Structure, Health, Life, Functions, and Oeconomy.

PHYSOCELE, from φύσα, a Flatus; and κήλη, a Tumor. A Wind-rupture.

PHYSTE, φύστη. A Maſs of Meal macerated, in a Veſſel, in Wine, but not worked.

PHYTALIA, φυταλία. The latter Part of the Winter. But it, alſo, ſignifies, a Place where Vines are planted.

PHYTEUMA. A Name for the *Reſeda*; *minor*; *vulgaris*.

PHYTOLACCA.

The Characters are;

The Flower is roſaceous, polypetalous, and diſpoſed in Bunches; the Berry is ſoft, globular, and full of Seeds diſpoſed in orbicular Order.

Boerhaave mentions two Species of *Phytolacca*; which are,

1. Phytolacca; Americana; majori fructu. *Tourn. Inſt.* 299. *Boerh. Ind. A.* 2. 70. *Phytolacca*. Offic. *Solanum racemoſum Americanum*. Raii Hiſt. 1. 662. *Solanum magnum Virginianum rubrum*. Park. Theat. 347. *Solanum racemoſum Indicum*. Hort. Reg. Par. 167. PORK-PHYSIC.

It was brought from *Virginia* and *New England*, and is cultivated with us in Gardens. The Leaves are uſed in Medicine, and eſteemed an excellent Anodyne. *Dale*.

2. Phytolacca; Americana; fructu minori. *T.* 299. *Solanum Barbadenſe, racemoſum, minus, tinctorium, Circææ foliis mollibus & incanis*. Pluken. Alm. 353. Phytogr. T. 112. Fig. 2. M. H. 3. 522. *Boerh. Ind. alt. Plant. Vol.* 2.

This Kind of Plant is called *Phytolacca*, from φυτὸν (*Phyton*), a Plant; and *Lacca*, becauſe it gives a red Colour like *Lacca*. The Virtues are yet unknown. *Hiſt. Plant. adſcript. Boerh.*

PHYTOLOGIA, φυτολογία, from φυτὸν, a Plant, and λέγω, to treat of. That Part of Pharmacy which treats of Plants.

PHYXIMOS, φύξιμος. An Epithet of Diſeaſes in *Hippocrates*, importing ſalutary, or of which a Perſon is likely to recover.

PIA MATER. The thin Membrane which immediately involves the Brain. See CAPUT.

PIANTERIA, πιαντήρια. Aliments which increaſe Fatneſs, and Corpulence.

PIATTONES. Crab-lice.

PICA. Offic. Schrod. 5. 323. Schw. A. 333. Mer. Pin. 172. Charlt. Exer. 75. *Pica varia cordata*. Will. Ornith. 87. Raii Ornith. 127. Ejuſd. Synop. A. 41. Aldrov. Ornith. 1. 784. Geſn. de Avib. 628. Jonſ. de Avib. 27. THE MAGPYE, or PIANET.

This Bird is very much commended againſt Dimneſs, Redneſs, and Pains of the Eyes, being eaten, or incinerated, and the Aſhes put into the Eyes, or any other way apply'd; the Aſhes are, alſo, exhibited in the Mania, Epilepſy, and Melancholy. *Dale*.

PICA GLANDANA, or *Glandaria*, is another Species of Magpye, ſuppoſed to be the *Pica Græca*; to which the ſame Virtues are aſcribed, as to the preceding.

PICA is, alſo, the Name of a Diſtemper, in *Greek*, κίττα, (*Citta*) being a depraved Appetite principally incident to Women with Child, to the End of the ſecond or third Month of their Pregnancy. They who are affected, have abſurd Longings after ſour, ſharp, or acrimonious Things, and ſometimes after Earth, Shells, Coals, old Rags, rotten Pieces of Leather, and other things abhorrent to Nature. Men are ſometimes moleſted with the like vitiated Appetite, which is ſuppoſed to proceed from a Collection of depraved Humours in the Stomach.

The Diſeaſe is called *Pica*, either from the Variety of abſurd Longings, which bears Analogy to the Variety of Feathers obſerved in the *Pica*, or Pye, or becauſe, perhaps, that Bird is ſubject to the ſame Diſorder. The Scholiaſt of *Ariſtophanes* gives another Reaſon; for he ſays, the Pye is a Bird of a voracious and univerſal Appetite, and difficult to be pleaſed; that he longs after Fruits, but is ſoon diſguſted; and, when he has eaten of this or that kind of Apple or Berry, he is preſently ſatiated with it, and flies from Tree to Tree in Search of new Varieties: So that Women are properly ſaid to be affected with the *Pica*, when they long for this and that kind of Food, and, when they have taſted it, conceive an Averſion to it; which Kind of Loathing is called ἀλφιοφία, *Halphiophia*. But however κίττα may ſignify the Bird *Pica*, as well as a Diſeaſe, we have no Authority for affixing that double Signification to the Word *Pica*; for none ever called a Diſeaſe, in proper *Latin*, *Pica*. *Pliny*, therefore, always calls this Diſorder *Malacia Gravidarum*, in *Greek* μαλακία, from μαλακὸς (*Malacos*), ſoft, languid. It is defined, like the κίττα, or *Pica*, to be a languiſhing Diſorder incident to pregnant Women, in which they long ſometimes for one thing, ſometimes for another; ſome deſire to eat Earth, dead Coals, or Terra Cimolia, as *Paulus* ſays, *Lib.* 1. *Malacia* is, alſo, a Diſorder or Weakneſs of the Stomach; in which Senſe it is uſed by *Pliny*, *Lib.* 28. *Cap.* 7. *Lib.* 23. *Cap.* 6. Μαλάκια (*Malacia*) are expounded in *Galen*'s Exegeſis, aqua-

tile Animals having no Spine, as the Polypus, Loligo, Sepia, and Urtica; theſe have neither Blood nor Viſcera; and, *Lib.* 3. *de Alim. Fac.* he deſcribes them as having no Scales, nor rough or teſtaceous Skin, but ſoft like the human. *Pliny*, *Lib.* 9. *Cap.* 18. calls them *Mollia*, by a literal Tranſlation of the *Greek*, and gives the ſame Deſcription of them. The Place in *Hippocrates*, to which *Galen*, in his Exegeſis, had a reſpect, ſince we can only conjecture, in this Caſe, appears to me, ſays *Foeſius*, without all doubt, to be that, *Lib.* περὶ γυναικ. φύσ. where we read, καὶ σιτίοισι μαλθακοῖσι, καὶ τοῖσι πολύποισι, καὶ τοῖσιν ἄλλοισι μαλθακοῖσιν, "with "ſoft Foods, as Polypuſes, and other ſoft (aquatile Animals)."

The *Pica*, according to *Riverius*, in *Lib.* 9. *Cap.* 3. *Prax. Med.* is ſuch a Depravation of the Appetite, as excites the Patients to an uncommon and preternatural Fondneſs for abſurd, uſeleſs, and hurtful Aliments.

This Diſorder is produced by depraved and corrupted Juices, either generated in the Stomach, in conſequence of an undue Concoction, or convey'd to it from other Parts.

Humours of this Kind are, for the moſt part, generated in Perſons of phlegmatic and melancholic Habits, and eſpecially in Women, to whom this Diſorder ſeems, in a manner, peculiar, tho' Children and Men are ſometimes, tho' very rarely, afflicted with it. Humours of this Kind are principally generated by the Uſe of bad Aliments; a Suppreſſion of ſome natural Evacuation, and eſpecially of the Menſes, Grief, Diſorders, Obſtructions, and Weakneſs of the Liver and Spleen, and various Diſeaſes of the Uterus.

Theſe corrupted Humours are of various Natures and Qualities, according to the various Degrees of their Corruption and Intemperature. Hence ariſe various Inclinations to various, abſurd, and improper Aliments; for ſince ſome of theſe Humours are crude and unconcocted, and others of an hot and inflammatory Quality, ſo ſome are fond of acid, auſtere, bitter, and highly-cold Subſtances, ſuch as unripe Fruits, Vinegar, Verjuice, the Juices of Oranges, Pomegranates, and Lemons, cold Water, Snow, and Ice; whilſt others covet earthy, dry, and hot Subſtances, ſuch as Cloves, Cinnamon, Nutmegs, and other Aromatics, Salt, Aſhes, and Plaſter.

This Diſorder is familiar to young Women labouring under a Chloroſis, and to pregnant Women, on account of the Suppreſſion of the Menſes; which, by remaining long in the Body, aſſume a peccant Quality; and being convey'd to the ſuperior Parts, load the Stomach with that corrupted Humour which depraves its Actions, and perverts the Appetite. Sometimes Children, eſpecially thoſe born of Mothers labouring under a Chloroſis, are ſubject to this Diſorder. Nor are Men totally exempted from this Misfortune, tho' they are but rarely afflicted with it, and thoſe Men are moſt ſubject to it, who are of a melancholic Habit, labour under Obſtructions, or a Suppreſſion of the hæmorrhoidal Diſcharge.

The Diagnoſtic of this Diſorder is ſufficiently eaſy; for by the bare Relation of the Patient, 'tis certain, that the Part principally affected is the Mouth of the Stomach, which may be ſaid to be the Seat of Appetite. The Cauſe may, alſo, be conjectur'd at from their being fond of Subſtances of a ſimilar Nature with the peccant Humours in the Stomach; for if they are fond of Coals, Salt, and other Things of a like Nature, we may conclude, that ſaline and hot Humours produce the Diſorder. But this Conjecture will be converted into Certainty, if any Quantity of theſe Humours is thrown up by Vomit, or diſcharged by Stool; or if acid, or nidorous Eructations are preſent, or a bitter acid, or ſaline Taſte perceived in the Mouth.

As for the Prognoſtic of this Diſorder; it is of the chronical Kind, but not very dangerous; ſince, in Proceſs of Time, the peccant Humour is removed by frequent Vomits, or other proper Medicines, and the Menſes, or hæmorrhoidal Diſcharge, a Suppreſſion of which, laid the Foundation of the Diſorder, are at laſt reſtored. But if theſe are neglected till Nature is too much weakened, terrible Diſorders may ſucceed; for when the firſt Concoction is vitiated, the ſecond and third muſt neceſſarily be ſo too. Hence violent Obſtructions, Cachexies, and Dropſies happen. Or if the Quantity of the peccant Humour, lodged in the Stomach, is very great, or its Quality highly malignant, it ſometimes produces terrible Cardialgias, which terminate in Deliquiums, Syncopes, and ſometimes in Death.

If Women, labouring under this Diſorder, begin to abſtain from the improper and abſurd things they were fond of, and with leſs Reluctance uſe laudable and wholſome Aliments, it is an infallible Sign of a beginning Cure, and approaching Health.

Pregnant Women are generally freed from the Malacia about the fourth Month, becauſe the Fœtus, becoming at that time larger, conſumes a greater Quantity of the Humours, and the Mother, by frequent Vomitings, throws up the Sordes lodged in her Stomach. But if the Diſorder continues any longer, it is dangerous; for 'tis a Sign, that the peccant Humours are deeply rooted, and cannot be eliminated without Difficulty.

'Tis better that Perſons, labouring under this Diſorder, ſhould be fond of acid and ſharp-taſted Subſtances, than of ſuch as are directly unfriendly to Nature, as *Avicenna* informs us, in *Fen* 1. *Lib.* 2. *Tract.* 2. *Cap.* 20. for a Fondneſs for the latter indicates a

greater Receſs from a natural State, not to be cured without great Difficulty.

The Cure of this Diſorder is to be varied according to the different Conſtitutions of the Patients.

In pregnant Women, very few Medicines are recommended as proper, for fear of Abortion. However, even in theſe, gentle Medicines may be uſed for evacuating and corroborating the Stomach. Nor is moderate Veneſection, frequently repeated, to be neglected, if there is a Neceſſity for it, ſince it is of great Efficacy in the Cure of this Diſorder.

In young Women labouring under a Chloroſis, this Diſorder is cured by the ſame Medicines which are proper for removing the Chloroſis.

As the Pica in Men, which, however, rarely happens, proceeds from Obſtructions of the Liver and Spleen, it muſt of courſe be removed by every thing which removes theſe Obſtructions.

According to Doctor *Pitcairn*, in his *Element. Med. Lib.* 2. *Cap.* 18. in this Diſorder, ſuch Things as obtund Acids, are to be preſcribed; fixed Salts; mucilaginous, oleous, and pinguious Subſtances; the Effects of all which are to hinder the free Contact of the Coats of the Stomach with each other. For anſwering this Intention, he himſelf orders viſcid Subſtances, and ſuch as remain long in the Stomach.

Thus, for Aliments, he preſcribes Gellies of Hartſhorn, Broths of gelatinous Fleſhes, and other things of a like Nature.

For Drink, he orders *Spaniſh* and *Canary* Wines, moderately drank; and eſpecially *Brunſwick* Mum, or *Dutch* Hydromel, prepared of one Part of Honey, and ſix Parts of Water.

PICACISMUS. The ſame as PICATIO.

PICANS. An Epithet for Wine, importing, that it is of a ſweet delicious Flavour.

PICATIO. Pication. A Species of *Dropax*. For this Purpoſe, dry Pitch is melted with a very ſmall Quantity of Oil, and applied to the Skin whilſt warm. This Preparation adheres ſtrongly to the Parts previouſly ſhav'd, and is to be pull'd off, before 'tis perfectly cold. Then it is to be warm'd at the Fire, applied in the ſame manner, and pull'd off, before 'tis entirely cold. This Method is to be repeated very often. This *Picatio*, or *Dropax*, is highly beneficial to Patients afflicted with continual Vomitings, Crudities of the Stomach, Indigeſtion, and the Cœliac Paſſion. It is, alſo, properly applied to Parts not duly nouriſhed by the Aliments. When 'tis requiſite this common Dropax ſhould be heating, we add to it Pepper, Pellitory of *Spain*, Roſemary-ſeeds, and Bitumen: When we want it of a drying Quality, we add to it native Sulphur, Salt, and the Aſhes of Vine-twigs. If we intend it ſhould be of a ſtimulating Nature, we add *Limneſtis*, commonly call'd *Ardace*, or Euphorbium. All theſe Ingredients, when triturated, are to be ſprinkled into the melted Pitch and Oil. *Aetius, Tetr.* 1. *Serm.* 3. *Cap.* 180.

PICATIO, alſo, implies the ſame as PICA.

PICATUM VINUM. See PISSITES.

PICEA. See ABIES.

PICERION, πικέριον. Butter. *Hippocrates, Galen.*

PICINUM OLEUM. The ſame as PISSELÆUM.

PICOTA. A Diſtemper, conſiſting of an Eruption of very minute red Puſtules. *Caſtellus.*

PICRIS. A Name for the *Cichoreum Sylveſtre, ſive Officinarum.*

PICHROCHOLOS, πικρόχολος, from πικρὸς, bitter; and χολὴ, Bile. A Perſon abounding with bitter Bile. *Hippocrates.* Sometimes it ſignifies a Perſon very ſubject to Anger.

PICTONUM COLICA, or COLICA PICTONIA, or PICTAVIENSIS. The Name of a nervous Colic, generally called, in the Weſt-Indies, *the dry Belly-ach*. This is ſo popular a Diſeaſe in the *Leeward* Iſlands, that it may, very juſtly, be reckon'd an Endemic in them, moſt People there, at one time or other, having felt its Cruelty.

There is not, in the whole Compaſs of Infirmities, to which Fleſh is liable, any one that afflicts human Nature in a more exquiſite Degree, than this unmerciful Torture. The Belly is ſeized with an intolerable piercing Pain, ſometimes in one Point only, and ſometimes in ſeveral Parts of the Inteſtines. In a ſhort time, the Affliction becomes more diffuſive, and ſtretches itſelf from the Point where it was firſt felt, to a greater Diſtance; which is done in ſuch a manner, that the Fibres of the Bowels ſeem to be contracted, and drawn up from the Anus, and the Pylorus, towards the Part primarily affected, as into the Centre of Miſery: During this Scene of the Diſtemper, which ſometimes laſts eight, ten, or fourteen Days, the Patient is upon a perpetual Rack, with ſcarce any Remiſſion from Pain. He undergoes all the various Modifications of Torment; and the burning, lancinating, and biting Pain, by turns afflict him with a Diverſity of grievous Senſations. The Belly continues, all this time, obſtinately coſtive; very little Urine is made; the Strength is greatly impair'd; the Habit exceedingly waſted; the extreme Parts are cold; and the Patient frequently falls into clammy Sweats and Deliquia. The Affections of the Mind are much diſorder'd; Grief, Anger, Rage, and Deſpair, uſurp the Place of Reaſon; the vital, natural, and animal Functions, are perverted; and the miſerable Patient, at length ſinks under the Agony of his Affliction.

The principal Cauſes concurring to the Production of this Colic are, immature, auſtere, and aſtringent Fruits, eaten in too great Quantities; debauching in ſtrong Punch, highly acidulated with the Juice of Lime; and travelling in the Night, after too free Ingurgitation of ſpirituous Liquors.

When the Extremity of the Pain begins to abate, the ſick Perſon often obſerves a ſort of tingling Uneaſineſs through the ſpinal Marrow; which propagates itſelf from thence to the Nerves of the Arms and Legs, which, at this time, are very weak and debilitated. This Weakneſs and Inability increaſes daily; till, in a ſhort time, it terminates in a confirm'd Palſy of the Extremities. The ſudden Tranſition from the Colic to a Palſy made Dr. *Willis* conjecture, that the Nerves of the Meſentery were principally affected in this Diſeaſe.

In order to ſubdue this dire Diſtemper, and prevent the paralytic Conſequences of it, we muſt employ our utmoſt Endeavours to remove the Conſtipation of the Bowels, and ſolicit them to a Diſcharge. But this is not, upon any account, to be attempted by ſtrong ſtimulating Cathartics, which, by their forcible and repeated Irritations, would vellicate and contract the Fibres of the Guts, enrage the Pain, create convulſive Motions of the Bowels, haſten on the Palſy, or change the Diſeaſe into a *Miſerere Mei*. The mild, lenitive, detergent Purges are, therefore, to be relied on in this Exigency, and they ought to be given in liquid Forms, ſmall Quantities, moderately warm, and frequently repeated, till they ſlide through the Inteſtines, and procure a Stool.

But it is almoſt impoſſible, that this ſhould be effected, ſo long as the Bowels continue under ſuch ſpaſmodical Diſorders as they are now in: We muſt, therefore, have a due Regard to the mitigating this Inconveniency. There is not any Preparation of Opium ſo effectual in this Caſe, as the *Pil. Matthæi*, which receives a prodigious Advantage from the aperient Quality of the *Sapo Tartareus.*

It has been a received Opinion, that Opiates, in this Diſtemper, have often proved the Occaſion of the paralytic Conſequences which have enſued; but I am fully convinced from undoubted Experience, that this Obſervation is erroneous, having always found the deſired Succeſs from the Adminiſtration of them, tho' given with a liberal Hand. However, it may not be improper, in theſe Caſes, to add three or four Grains of Caſtor to each Doſe of the *Pil. Matthæi.*

The Method by which I have relieved many in this dreadful Diſtemper, is as follows. As ſoon as I came to the Patient, I order'd eight or ten Grains of the *Pil. Matthæi* to be given him; and, about half an Hour after, half an Ounce of Manna, two Drams of Cream of Tartar, and one Ounce of ſolutive Syrup of Roſes, in warm Water-gruel; and this is to be repeated every three Hours, allowing four Grains of *Pil. Matthæi* to be adminiſter'd in the Intervals. But if the great Propenſion to vomit ſhould render the Stomach incapable of retaining the laxative Draught, ſo that no Operation is to be expected from it, then it will be neceſſary to appeaſe that Symptom with the following, or ſome other Mixture of the like Kind, before we proceed any farther.

Take of Salt of Wormwood, one Scruple; pure Opium, a Grain, or a Grain and half; ſtrong Mint-water, an Ounce; Syrup of Lemons, a Spoonful. Mix them together.

A Clyſter is, alſo, to be injected once in four Hours, till the Body becomes ſoluble. Theſe Clyſters ſhould always admit of Balſamics in their Compoſition, and may be made in the following manner.

Take of common Decoction, eight Ounces; Balſam of Capivi, diſſolved in Yolks of Eggs, two Drams; Soap of Tartar, one Dram; Oil of Anile, two Drams. Mix them together.

In the mean time, warm Fomentations are to be applied all over the Region of the Abdomen, with Flannel Cloths.

Take of Chamomile-flowers, three Ounces; Juniper and Bay-berries, each an Ounce; boil them in five Pints of Spring-water, to three. At the End, add of Carraway, Fennel, and Aniſe-ſeed, each half an Ounce; diſſolve in the ſtrain'd Liquor, a Dram of Opium; and add a Pint of Rum.

A Semicupium, or Bath, made with the Leaves of wild Sage, Lavender, Roſemary, Chamomile, and other warm, nervous Plants, often help to alleviate the Pain, and afford conſiderable Relief to the diſtreſs'd Patient.

When the Pains begin to be mitigated, and the Body is ſomewhat open, it will be time to proceed to Purges of greater Efficacy; and chiefly, ſuch as are compoſed with a Mixture of Mercurial Preparations.

Take of Calomel, a Scruple; the ſmaller Pil. Cochiæ, a Scruple; Opobalſamum, enough to make them into four Pills; to be taken in the Morning, and repeated every Day, till the Pain remits, and the Body becomes ſoluble.

Opiates

Opiates may now be laid aſide, unleſs the Urgency of the Symptoms ſtill require the Continuance of them; or, at leaſt, their Quantity may be leſſened; and, in their ſtead, the Patient is to take two Scruples of Balſam of *Peru*, with Loaf-ſugar, or in any other convenient Form, every ſix Hours: This Medicine will rarely be found to fail, when given at a proper Time of the Diſeaſe, and in a ſufficient Doſe; which has been too long neglected in Practice.

There is another Production of Nature, which Providence has plentifully beſtowed on this Iſland, I mean the *Piſſelæum Indicum*, or the *Barbadoes* Tar, as it is commonly called: This indeed is not ſo elegant to the Taſte and Smell, as the foremientioned Balſam; but, where the Stomach can comply with it, I am ſure it is of much greater Efficacy in this Diſtemper. I need not, ſurely, uſe many Arguments, to prevail with any Perſon under theſe Circumſtances, to diveſt himſelf of Prejudices to a Remedy, which will ſo powerfully conduce to his Eaſe and Safety; for a Man muſt be ſtrangely Palate-ridden, who will endure the higheſt Aggravations of Torture, and run the Riſk of diſabled uſeleſs Limbs, for the Gratification of Taſte. I would, therefore, adviſe, that two Drams of this Piſſelæum be given three times a Day, till the Diſeaſe be totally vanquiſhed.

Upon the firſt Apprehenſion of the tingling Uneaſineſs along the Spinal Marrow, or the Numbneſs and Inability of the Limbs, the whole Length of the Vertebræ, as well as the Limbs, ought to be well chafed with a Mixture of this Tar, in double-diſtilled Rum, which will (if any thing in Nature can) avert the impending Paralyſis.

This is a Method which I have ſucceſsfully uſed, in a Malady which was generally attended with ſuch fatal Conſequences, under a different Management; and I could not forbear making it public, for the Benefit of an Iſland which has laid me under the ſtrongeſt Obligations of Gratitude.

When the Palſy has been actually formed, either from injudicious Treatment, or the Violence of the Diſtemper, I have not been able to diſcover any means effectual enough to remove it, unleſs the Patient would be prevailed upon to leave the Iſland, and repair to *England*, where *Bath* Waters taken inwardly, and applied to the affected Parts by Pumping, with other proper Remedies, have often perfected the Cure. *Towne*'s *Diſeaſes of the Weſt-Indies*.

PICUS MARTIS. The Woodpecker: A Bird of which there are many Species, beſides that commonly known in *England*. It has the Reputation of being good for the Eyes, and to preſerve and improve Viſion: For this Purpoſe it is eaten dreſſed, or boiled in Soop: It is, alſo, applied to the Eyes; and the Blood is dropped into them, with the ſame View.

PIERRE DE COLIQUE. See UMBRA.

PIESMA, πίεσμα, from πιέζω, to preſs. The *Magma*, or Reſiduum, which remains after the fluid Part is preſſed out: Thus, in the Expreſſion of Oils, the Cake, or what remains in the Bag, is called the *Pieſma*; and in this Senſe it is uſed by *Hippocrates*. But *Dioſcorides*, *Lib.* 1. *Cap.* 106. ſpeaking of Bay-berries, calls their expreſſed Juice *Pieſma*: And it is uſed by *Galen*, in the ſame Senſe.

PIESTER, πιεστὴς, or πιεστήριον, a Preſs; from πιέζω, to preſs.

PIESTRON, πίεστρον, from πιέζω, to preſs. An Inſtrument recommended by *Hippocrates*, for breaking the Bones of the Head of a Fœtus, when too large to be otherwiſe extracted: It ſhould ſeem to be a Sort of Forceps.

PIGMENTARIUS. A Vender of Ointments. *Rhodius ad Scribon. Largum.* An Apothecary, or Druggiſt.

PILA. A Ball. See SPHÆRA. It, alſo, ſignifies a Mortar, or a Peſtle.

PILA MARINA. This is a Species of Alcyonium, or a round ſpherical Ball, found on the Sea-coaſt, among the Wrack. It is generally as large as a Perſon's Fiſt, but ſometimes larger, and ſometimes leſs: It is lanuginous, of a dark Colour, and formed by a Collection of Hairs, Sand, and other Impurities of the Sea, united by means of ſome glutinous Liquor. It is ſaid to be proper for killing Worms, and preſerving the Hairs, when applied externally. *Lemery des Drogues.*

The Pila Marina cannot be reduced to a Powder, till it is thoroughly calcined. Authors are of Opinion, that this Subſtance is good againſt ſcrophulous and ſtrumous Diſorders, not only on account of its drying Nature, but, alſo, in conſequence of ſome other latent Quality. Neither can I totally reject this Opinion, ſince it is a Subſtance, whoſe ſaline Quality is not deſtroy'd by Calcination. *Zwelfer.*

PILARELLA. The ſame as PELADA.

PILARIS MORBUS. The ſame as TRICHIASIS.

PILATIO. A minute Fiſſure of the Cranium, not larger than an Hair.

PILEUS, or PILIOLUS. See CUCUPHA. In Anatomy, the Coif with which ſome Children are born, is called *Pileus*, *Pileolus*, *Galea*, and *Vitta*.

PILI ZENII. The Hairs which grow about the Scut of an Hare. *Rulandus.*

PILIMICTIO. A Diſcharge of Subſtances reſembling Hairs, with the Urine. See TRICHIASIS.

PILIPOC *Philippinarum Inſularum.* Nieremb.

This Plant is of two Kinds, the Male, and the Female: The firſt is the greater, and has larger Leaves, and grows among Rocks; the other, or Female, is leſs, and grows in Plains: On the Roots of them both grow dark-coloured Tubercles, of the Bigneſs of a Man's Fiſt: The Trunks, which are of a dark-brown Colour, and without Joints, being cut athwart, are divided into a ſort of Pellicles, like the Membranes or Coats of Onions: The Leaves are like thoſe of Bay, and are remarkably acuminated; are produced in a moiſt and ſhady Situation, and roll themſelves about the Trees. The Root is of Uſe for venomous Bites, and in Potions; but is ſlow in Operation. *Raii H. P.*

PILORIS. A very large Species of Rat, found in *Martinico*, which ſmells like Muſk. The Inhabitants eat them: But they are of no Uſe in Medicine.

PILULA. Pill.

The Form of Pills is principally deſigned for ſuch Things as are too nauſeous to be taken any other Way; or are moſt readily fitted, by their natural Texture, to this Kind of Management: Of the firſt Kind are the Aloes, Colocynth, and the like, which are thus beſt concealed from the Taſte; and of the latter are moſt Gums, which, with very little Trouble, are reduced into Pills.

But this Form being generally the moſt troubleſome to take, as few Things ſhould be contrived into it as poſſible; that is, ſuch only as, by their Irkſomeneſs in going down any other Way, make it neceſſary to conceal them by this means. But this Reaſon ought to extend only to ſuch Things, which are of ſufficient Efficacy, not to make above four or five ſmall Pills for a Doſe. Thus, the Bark, in Powder, and all the lighter Species, which are given in the Quantity of half a Dram, or upwards, for a Doſe. If, to avoid the Irkſomeneſs of other Forms, Recourſe ſhould be had to this, a neceſſary Quantity of Moiſture, to reduce them into it, would make one Doſe into ten, twelve, or fifteen ordinary Pills, which are more than any one can be imagined well to get down; for half a Dram in the Maſs makes five middle-ſized Pills, and half a Dram of dry Powder will take up above double its Quantity of Syrup, to bring it into a Maſs of due Conſiſtence. The gummy Subſtances, indeed, are thus reducible by Liquor, which will but little increaſe their Bulks; and for this Reaſon, alſo, they have a peculiar Fitneſs for this Form.

But there are ſome Things abſolutely unfit for Pills, by reaſon of their natural Texture and Properties, except in ſmall Quantities; and theſe are all the volatile Salts, and moſt of the fixed ones. The firſt heave and ferment them into unreaſonable Bulks; and the laſt render a Maſs ſo brittle and crumbly as make it almoſt impoſſible to be worked into Pills; though both theſe Inconveniencies may, in ſome meaſure, be avoided, by contriving to mix with either of theſe Salts other Things which are very tenacious, as ſome of the Extracts and Gums; and this makes the Pilulæ Ecphracticæ, now directed in the Diſpenſatory, at firſt of a tolerable Conſiſtence.

One very material Thing, likewiſe, to be conſider'd in this Form, whether officinal or extemporaneous, is, that the Liquor or Moiſture, wanted to give a Conſiſtence, have the moſt convenient Fitneſs to the Thing requiring it. Thus dry light Powders will not make up with any thing thinner than Syrup; and ſome of the heavy ones, as Cinnabar, and moſt of the Mercurials, will hardly do with any Moiſture of a lower Conſiſtence than Honey or Conſerve. But the gummy Subſtances, eſpecially thoſe which moſt approach to an oily or reſinous Texture, as Galbanum, Opopanax, Myrrh, and the like, will not ſo well make up with Syrups or Conſerves, not only on account of increaſing their Bulks too much, but becauſe they will not ſo well incorporate with them, as with ſpirituous and more penetrating Liquors. As this Form, therefore, muſt have ſomewhat in it adheſive and tenacious, where it is not in the dry Subſtances, it muſt be ſought for in a proper Moiſture to hold them together; and where it is ſufficiently already in thoſe Subſtances, as in the Gums, the thinner Liquors are beſt, to give them a Conſiſtence, or ſuch as are better ſuited to incorporate with them, than aqueous Moiſtures, as the terebinthinous Balſams; for ſome fat Subſtances will refuſe a Syrup, at the ſame time that they will readily take in Turpentine, or any thing of like Diſpoſition.

Among the officinal Pills, there are but few that do not take in ſomething purging, and thoſe are as follow: The Pilulæ Gummoſæ were never in the *London* Diſpenſatory before, tho' long ago in ſome others; ſo that it may not, perhaps, be yet much brought into the Shops; but it is a very uniform Compoſition; only the Mithridate will not ſo readily incorporate with

with ſuch Materials as Spirit of Caſtor, or any terebinthinous Subſtance. Such things are, likewiſe, ſooner brought into a Maſs, with a Mortar a little warmed. The Storax-pill has ſtood long approved for an excellent Compoſition, by the frequent Preſcription of it in Catarrhs, and ſuch-like Defluxions; but the Texture of its Materials, though moſt of them gummy, partake ſo little of an oily Principle, that they readily make up with a Syrup into a very good Conſiſtence. The Pilulæ de Cynogloſſo are calculated for the ſame Intentions, and hardly to be known from this in the Maſs, the Ingredients being nearly the ſame in both; but the Storax-pill is generally preferred, as a ſhorter and more uniform Compoſition. The Laudanum is ſubject to grow brittle, and ſometimes a little mouldy at the Top; both which are prevented by keeping it cloſe from the Air. The Quantity of Opium is much better aſcertained in this, than in any liquid Forms; and, with a little Trouble, this may be diſſolved into Draughts for extemporaneous Uſes, though it is the moſt ready for a Bolus, or Pills.

Among thoſe which take in Cathartics, ſome do it ſo ſparingly, that they ought rather to be deemed Alterants than Purgers; ſuch as the Aloephanginæ Fœtidæ, and Stomachicæ cum Gummi; all which ſo abound with Ingredients of other Intentions, that the purging ones are almoſt loſt in them. *Saſſenus* finds great Fault with the firſt of theſe; but it is ſo very little uſed now, that it is hardly worth a critical Examination here; and eſpecially as the Tinctura Sacra is a Medicine much better contrived for the ſame Intentions, on all Accounts, both for Taking and Efficacy. The Pilulæ Fœtidæ cannot be juſtified for a very uniform Compoſition; but, in the main, it takes in ſo many Things which are efficacious in hypochondriacal, hyſterical, and other nervous Diſorders, that it is generally uſed with Succeſs; but if ſo much of the Juice of Leeks be applied in diſſolving the Gums, that it wants but little of the Syrup to bring it to a Conſiſtence, it will be very ſubject to grow mouldy with keeping. In this, and all other Compoſitions which take in Ingredients ſo different in Textures, all that will powder, ought to be ſo reduced together; and, when the Gums are ſtrained, after diſſolving them with a moderate Heat, in the Liquor directed, they are put together in a Mortar, and beat into a due Conſiſtence, with a proper Quantity of Syrup. The Oil of Amber, or any thing elſe of like Nature, is beſt rubbed firſt into the dry Powders. The Pilulæ Stomachicæ cum Gummi continue to be ſometimes ordered; but they are not ſo much eſteemed as they were formerly; the Tinctura Sacra, alſo, taking place of it to better Advantage. There are, likewiſe, ſome other Cathartics of weak Efficacy, from their Mixture with other Things, which are ſo little uſed, that they deſerve not much Examination; as the Pilulæ de Agarico, de Aloe Iota, de Ammoniaco Magiſtrales, Cochiæ majores, Diambræ, and Mechoacanna; all which are hardly ever made or preſcribed. The Pilulæ Ecphracticæ, for the Reaſons already given about Salts contained in Pills, are of ſo brittle a Conſiſtence, that they, likewiſe, are ſeldom to be met with in the Shops, or in Preſcription. The ſame Diſadvantage, alſo, have the Pilulæ de Rhabarbaro, de Scammonio, and Tartareæ.

The Pilula Ruffi is the only one in this Rank, which is much approved in common Practice; and indeed its Ingredients are ſo few, and thoſe ſo good in the Intention of a gently purging Stomachic, that they very well deſerve this Preference: This, and the Elixir Proprietatis, take in the ſame Ingredients, and differ in little elſe than their reſpective Forms: This Pill, as to its Goodneſs, is ſo much judged of by its Colour, which is coveted of a bright yellow, that moſt, if not all, Compounders bring it to a Conſiſtence with Syrup of Lemons, which much improves it in that reſpect, inſtead of Syrup of Wormwood, which would greatly hurt it.

Among the moſt efficacious Purges, and thoſe moſt commonly in Uſe, are the Pilulæ Cochiæ minores, e duobus, and Pilulæ Rudii. The two firſt differ in little elſe, than in one's having the Aloes, and the other not, which makes the latter ſtronger, the Colocynth and Scammony being moſt powerful Cathartics. The Goodneſs of both is judged by the ſtrong Scent of the Oil of Cloves, which, being the moſt chargeable Ingredient, is moſt likely to be limited in its Quantity. The Pilula Rudii is of the ſame Contrivance as the Aloephanginæ; but is not ſo crouded with unneceſſary Ingredients, and, therefore, takes in the efficacious ones in larger Quantities, ſo that its Operation is briſk enough in a Doſe of half a Dram. But, in the common Way of making the Spirit, neceſſary to extract the Spices, and other hard Ingredients, moſt of it is drawn over before the Scammony and Aloes are put in; and after that it is diſtilled, ſo that the Remainder is near in the State of an Extract, or about the Conſiſtence of a Syrup, the Aloes is melted in it, and the Scammony ſifted in, when powder'd. The Pilulæ de Gutta Gamandra have nothing difficult in their Compoſition, but are of a more brittle Conſiſtence, and more liable to gripe in their Operation, upon account of the vitriolated Tartar, than they would be without it: Though this ſeems to be put into many of this Claſs, which abounds with reſinous Ingredients, as a means to divide them; but it is extremely racking to the Stomach and Bowels, and ſeems to be well ſupplied by the common Salt of Tartar.

There is not much to be learned from Examples of occaſional Preſcription in this Form, beſides what is common to every Form; for there is required nothing particular here, more than what hath been already taken notice of, concerning a proper Conſiſtence, and the not exceeding a certain Number in a Doſe.

Pilulæ de Agarico: *Pills of Agaric.*

Take of the Troches of Agaric, one Ounce; the Species of Hiera, half an Ounce; Myrrh, ſix Drams; Syrup of Buckthorn, a ſufficient Quantity to make into a Maſs for Pills: The Doſe is from a Scruple to a Dram.

Pilulæ Aloephanginæ. See Aloephanginæ.
Pilulae de Aloe Lota. See Aloe.
Pilulae de Ammoniaco Magistrales. See Ammoniacum.
Pilulae Balsamicae. See Cytiso-Genista.
Pilulæ Cochiæ Majores et Minores. See Cochia.
Pilulae de Cynoglosso. See Cynoglossum.

Pilulæ Diambræ: *Pill Diambra.*

Take of new Gum Guaiacum, and the roſated Aloes, each three Drams; ſimple Hiera Picra, a Dram and half; Maſtich, a Dram; the Species Diambræ, without the Perfumes, half a Dram: Let theſe all be reduced into a fine Powder; and, with a ſufficient Quantity of Peruvian Balſam, be made into a Maſs of a due Conſiſtence for Pills.

Pilulæ e duobus: *Pills of two Things.*

Take of Colocynth and Scammony, each an Ounce; Oil of Cloves, half a Dram; Syrup of Buckthorn, a ſufficient Quantity to make into a Maſs of a due Conſiſtence for Pills. The Doſe is from fifteen Grains to half a Dram.

Pilulæ Ecphracticæ: *Ecphractic Pills.*

Take of Gentian, Rhubarb, Gum Guaiacum, Salt of Steel, and Salt of Wormwood, of each one Ounce; of the Pilulæ Aloephanginæ, two Ounces; Syrup of Buckthorn, a ſufficient Quantity, to make all together into a Maſs of a due Conſiſtence for Pills. The Doſe is from fifteen Grains to half a Dram.

Pilulæ Foetidæ: *The fetid Pills.*

Take of Aloes, Trochiſci Alhandal, Opopanax, Ammoniacum, Sagapenum, Myrrh, and the Seeds of Rue, of each five Drams; of Scammony, and Aſa-fœtida, of each three Drams; of Turpeth-root, half an Ounce; of the leſſer Spurge prepared, and Hermodactyls, of each two Drams; of Ginger, one Dram and an half; of Spikenard, Cinnamon, Saffron, and Caſtor, of each one Dram; of Euphorbium prepared, one Scruple; of rectified Oil of Amber, half a Dram: Let the Gums be diſſolved in the Juice of Leeks, and ſtrained; then add the Powders, and mix them well together, and make into a Maſs, with a ſufficient Quantity of Syrup of Buckthorn.

Theſe are the *Pilulæ fœtidæ majores* of *Meſue*, and which our College tranſcribed exactly into their firſt Diſpenſatory, as, alſo, it is in the *Auguſtan* in the ſame manner; but, on a Review, the Bdellium hath been expunged, as having no Virtues correſponding to the Intention of the Whole; the Euphorbium hath been, alſo, leſſened by half its Quantity, becauſe of its exceſſive Heat and Pungency. Some other ſmall Alterations are, alſo, made, that are not of Moment enough for any particular Notice. *Quercetan* hath a Compoſition under the Title of *Pilulæ de Euphorbio*, not greatly unlike theſe, and which are tranſcribed by *Schroder*, who hath, in Book 4. taught many Ways how to correct the Euphorbium, as by baking it in a Citron or Lemon, or diſſolving and waſhing it with various Acids; which Means are imagined to abate its cauſtic, fiery Nature. The *Auguſtan* Diſpenſatory, alſo, orders it, for the ſame End, to be reduced to a kind of Pulp, or Maſs, with Oil of ſweet Almonds, and then macerated warm in any acid Juices; but the Quantity it is here ſo reduced to, requires no ſuch great Trouble. *Zwelfer* greatly recommends this Compoſition in arthritic Affections, and cutaneous Foulneſſes, beſides many other

Caſes; and the preſent Practice gives ſome Reputation to its Virtues, by directing it ſometimes in nervous and hyſteric Diſorders, to which laſt Intention the College ſeem to have had a particular Regard, by the Addition of Aſa-fœtida, which was never in it before: But the Maſs is ſomewhat difficult to keep, without moulding; which ſeems owing to the Juice of Leeks uſed for diſſolving the Gums, and not giving Body enough to keep it from drying: The beſt way is, to confine it in an oily Bladder, and a leaden Pot. This is a well-contrived Purge, of all kind of Humours which lay a Load upon the Nerves, and the principal Spring of the Animal Machine; for it is full of hot and penetrating Parts; and, as the Scammony acts as a Cathartic in the more open Paſſages, others carry the ſame Quality into the remoteſt Receſſes, and clear away watry and pituitous Humours from all the Glands and Capillaries; but particularly thoſe mucous Foulneſſes, which frequently diſorder the Womb. For theſe Reaſons this is a notable Purge in all Diſtempers of the Head, as Apoplexies, Epilepſies, Palſies, and the like, for hypochondriacal and ſplenetic Affections; and promotes *the uterine Cleanſings, ſo as to aſſiſt in the Cure of moſt* Complaints from that Quarter. Rheumatiſms, Schrophulas, and the Gout, it is calculated for; and the moſt extreme Parts will be drained of their Superfluities by it. But, for theſe extraordinary Purpoſes, it is to be frequently repeated, and to be given in ſmall Doſes, that it may not run off too faſt by Stool; for the more ſuch things are brought to the Operation of Alteratives, the more effectual are they to anſwer any Intentions of Moment; an Alterative in the Blood-veſſels operating by the ſame Means as a Cathartic in the Bowels: The general Doſe is from one Scruple to four Scruples.

PILULÆ GUMMOSÆ: *The Gum-pill.*

Take of Opopanax, an Ounce; of Gum Ammoniacum, Galbanum, and Sagapenum, of each half an Ounce; of Myrrh, two Drams; of Aſa-fœtida and Caſtor, of each three Drams; of Oil of Amber, one Scruple; of Mithridate, a ſufficient Quantity to make into a Maſs of a due Conſiſtence for Pills: The Doſe is from fifteen Grains to half a Dram every Night, or oftener.

PILULAE DE GUTTA GAMANDRA: *The Gamboge-pill.*

Take of Roſin of Jalap, Scammony, Gamboge, and Calomel, of each half an Ounce; of Gum Ammoniacum, diſſolved in the Juice of the Engliſh Orrice, three Drams; of vitriolated Tartar, two Drams; of Maſtich, one Dram; of Saffron, one Scruple; of the Spirit of Turpentine, forty Drops: And make the Whole into a Maſs of a fit Conſiſtence for Pills, with a ſufficient Quantity of Syrup of Buckthorn.

This is a very rough Purge, and cannot ſafely be given from above ten Grains to half a Dram. It is reckoned a great Purger of Water, and is therefore principally given in Dropſies, and ſuch-like Cachexies, that are attended with too great an Exceſs of Bulk; in which Caſe it is a powerful Medicine, but is not often preſcribed.

PILULAE MECHOCANNAE: *Pills of Mechoacan.*

Take of Mechoacan-root, half an Ounce; of Turpeth, two Drams; of the Leaves of Meſereon, macerated in Vinegar, and dried, of Dwarf-elder-ſeed, and the Troches of Agaric, of each two Drams; of the Spurge-root prepared, and Maſtich, of each one Dram and an half; of Mace, Cinnamon, and Sal Gem, of each two Scruples: Let all theſe, clean-powdered, be made into a Maſs, with White-wine, and that dried and powdered again; and laſtly, be beat up into a Maſs, of a Conſiſtence fit for Pills, with a ſufficient Quantity of Syrup of Buckthorn.

PILULAE DE RHABARBARO: *The Rhubarb-pills.*

Take of Rhubarb, one Ounce; of Reſin of Jalap, and Tartar of Vitriol, of each two Drams and an half; of the chymical Oil of Nutmegs, half a Dram; of the thinner Extract of Gentian, a ſufficient Quantity to make them into a Maſs of a fit Conſiſtence for Pills.

PILULAE RUDII.

Take of Colocynth, ſix Drams; of Agaric, Scammony, black Hellebore-root, and Turbeth-root, of each half an Ounce; of Succotrine Aloes, one Ounce; of Cinnamon, Mace, and Cloves, of each two Scruples: Let the Colocynth be cleared from its Seed, and cut ſmall, the Agaric ſhaved into Chips, and the Hellebore, Turbeth, and Spices, be groſly bruiſed; and, pouring upon them four times as much Spirit of Wine, let them macerate four Days together in a moderate Heat; then ſtrain and preſs out hard the Liquor, in which diſſolve the Scammony and Aloes, after they have been before duly cleanſed; laſt of all, put the Whole into an Alembic of Glaſs, and draw off ſo much of the ſuperfluous Moiſture, as will leave the Remainder as thick as Honey, for a Maſs to be made into Pills.

It may be given from fifteen Grains to two Scruples, and is effectual for all the Purpoſes the *Aloephanginæ* ſtand recommended for. This, at preſent, is in great Eſteem in the Shops for an Head-purger; and it is, indeed, the principal Pill in Uſe in moſt Caſes where Cathartics are preſcribed in this Form.

PILULAE RUFFI ſive COMMUNES: Ruffy's, *or the Common Pill.*

Take of the beſt Aloes, two Ounces; of choice Myrrh, one Ounce; of Saffron, half an Ounce: And make them all together into a Maſs, of a Conſiſtence fit for Pills, with a ſufficient Quantity of Syrup of Wormwood.

This is accounted a good Stomach-purge, and with good Reaſon; for it greatly warms and ſtrengthens it, and but very gently purges. It is peculiarly good in cold Conſtitutions and Indigeſtions, and will many times, without other Help, cure a Green Sickneſs; in which Caſe it greatly promotes the menſtrual Diſcharges, and opens uterine Obſtructions. It may be given from fifteen Grains to one Dram, but this is not ſo fit for a Catarrh, as an Alterative; and therefore ought rather to be given in moderate Doſes, and be long continued.

PILULAE DE SCAMMONIO: *Pill of Scammony.*

Take of Jalap-root, one Dram; of Scammony, and Vitriol of Tartar, of each one Scruple; of the chymical Oil of Nutmegs, ſix Drops; the more liquid Extract of Gentian, a ſufficient Quantity to make into a Maſs for Pills. Its Doſe is from one to two Drams.

PILULAE STOMACHICAE CUM GUMMIS: *Stomachic Pills with Gums.*

Take of the fineſt Aloes, one Ounce; of Sena-leaves cleanſed, five Drams; of Gum Ammoniacum, diſſolved in Vinegar of Squills, half an Ounce; of Maſtich and Myrrh, of each one Dram and an half; of Saffron, and Salt of Wormwood, of each half a Dram: Make them into a Maſs for Pills, with a ſufficient Quantity of Syrup of Buckthorn.

PILULAE DE STYRACE: *Storax-pill.*

Take of Storax, Olibanum, Myrrh, the inſpiſſated Juice of Liquorice, and Opium, of each half an Ounce; of Saffron, one Dram: Make them all into a Maſs for Pills, with a ſufficient Quantity of Syrup of white Poppies.

Schroder ſays, that *S. Cloſſæus* uſed it, with great Succeſs, to breeding Women, who were in Danger of Miſcarriage from the Trouble of frequent Coughing. It is much, that the *Auguſtan* Diſpenſatory, as well as the *Pharmacopœia Regia*, hath omitted it; as it is a very good Medicine, and now much uſed in common Preſcription againſt Catarrhs. There is one Grain of Opium in every ſix Grains of this Maſs; and therefore it ought, in the extreme Doſe, not to exceed twelve or fifteen Grains. It has all the Virtues of the *Pilulæ de Cynogloſſo*, but has ſomewhat more than double the Quantity of Opium in that. It is much more uſed, than any other of this Intention; but it ought to be with Caution.

PILULAE TARTAREAE: *The Tartar-pill.*

Take of the beſt Aloes, three Drams; of Gum Ammoniacum, cleanſed in Vinegar of Squills, half an Ounce; of Tartar of Vitriol, half a Dram: Make them together into Pills.

PILUM. A Peſtle.
PILUS. An Hair. See CAPILLUS.
PIMENTA. *Jamaica* Pepper. See CARYOPHYLLUS.
PIMPINELLA.

The Characters are;

The Flower is monopetalous, rotated, and generally cut into four Segments, to the very Centre, and adorned with four or more very long Stamina, and herbaceous, minute, and ſcarce viſible Bractem; for which Reaſon ſome pronounce it Apetalous. The Ovary becomes a Fruit, which is generally quadrangular, acuminated at both Ends, and conſiſting ſometimes of one, ſometimes of two Capſules, full of oblong Seeds.

Boerhaave mentions eight Species of Pimpinella; which are,

1. Pimpinella; maxima; Canadenſis; alba; ſpicata. *Cornut.* 175.

2. Pim-

2. Pimpinella; ſpicâ brevi, rubrâ. *M. U.* 57. *Sanguiſorba major, flore ſpadiceo.* J. B. 3. 120. *Sideritis*, II. *Dioſcoridis, major.* Col. 1. 124.

3. Pimpinella; ſanguiſorba; minor; lævis. *C. B. P.* 160. *Tourn. Inſt.* 157. *Boerh. Ind. alt.* 2. 99. *Pimpinella & Sanguiſorba.* Offic. *Pimpinella hortenſis.* Ger. 889. Emac. 1045. *Pimpinella vulgaris ſive minor.* Park. Theat. 582. Raii Hiſt. 1. 401. *Sanguiſorba minor.* J. B. 3. 113. Raii Synop. 3. 203. BURNET.

It grows in hilly Paſtures, and flowers in *June*, and the Leaves are in Uſe. The Plant is alexipharmic, vulnerary, and pulmonic; and is principally uſed in Catarrhs, Affections of the Lungs, a Phthiſis proceeding from Eroſion, in malignant Diſeaſes, Looſeneſſes, and Hæmorrhoids: It prevents Abortion, and is a Strengthener: Outwardly it is of Service in all Kinds of Hæmorrhages. *Dale* from *Schroder.*

There grows to the Root of this Plant, in ſome Places, a red Grain, which is uſed in dying a crimſon Colour: Whence ſome take it for the Coccus, and call the Root by that Name, as we are informed by *Lacuna* and *Anguillara.*

What is related of the Virtues of this Plant, may be reduced to two Heads; firſt, That it is cardiac and alexipharmic: Hence the green Herb is put into Wine, to exhilarate the Heart, and to improve the Wine itſelf, by communicating to it an aromatic Flavour and Taſte, much like that of a Melon: It preſerves, alſo, from the Peſtilence, and other contagious Diſeaſes. In the ſecond Place, it is an Aſtringent: Whence it is of excellent Service in an immoderate Flux of the Menſes, Fluxes of the Belly, all Sorts of Hæmorrhages, and in drying, conglutinating, and healing Wounds and Ulcers. Mr. *Boyle* uſed to exhibit the Powder of the dried Herb or Root, with Sugar of Roſes, for an Hæmorrhage of the Noſe, Spitting of Blood, and a Conſumption of the Lungs; the ſame, without the Sugar, ſprinkled on cancerous Ulcers, reſtrains them from ſpreading. *Solenander, Lib.* 3. *Conſil.* 27. recommends a Conſerve of the Leaves, with a Draught of the ſimple Water afterwards, for Piſſing of Blood; for which Purpoſe, alſo, the candied Root, he ſays, may be uſed. An Huntſman belonging to *Henry* the Second, King of *France*, ſolemnly affirm'd, that Pimpinella was of ſuch Efficacy for preventing an Hydrophobia, that whoever ſhould eat it for ſome Mornings together, either in a Salad, or any other way prepar'd, would never be viſited with the leaſt Symptom of that Diſtemper. *Palmar. de Morſu Canis rabidi. Panchorius* relates, that a King of *Chabam*, after a Battle, cured fifteen thouſand wounded Men with the Uſe of Pimpinella. *Raii Hiſt. Plant.*

4. Pimpinella; Sanguiſorba; eleganter laciniata. *H. R. Par.*

5. Pimpinella; Sanguiſorba; minor; ſemine majore, & craſſiore. *Bot. Monſp.*

6. Pimpinella; Agrimonioïdes; odorata. *H. R. Par.*

7. Pimpinella; ſpinoſa; ſeu ſempervirens. *M. U.* 57. *Poterio affinis, foliis Pimpinellæ, ſpinoſæ.* C. B. P. 388. *Poterium quibuſdam, ſive Pimpinella ſpinoſa.* J. B. 1. 2. 410. Χαλκῆον *Anguillaræ, Poterium Dalechampii.* Cluſ. H. 108. T. Voy. 1. 158.

8. Pimpinella; major; Hiſpanica, altera; conglomerato flore. *H. R. Par. T.* 157. *Boerh. Ind. alt. Plant. Vol.* 2.

Theſe Pimpinellas have the Appellation of *Sanguiſorba*, to diſtinguiſh them from the Pimpinellæ Saxifragæ, which are of a very hot Nature; but the Pimpinellæ Sanguiſorbæ are aſtringent. The Plant is aromatic, gently aſtringent, and of excellent Service in a Relaxation of the Fibres, and a too thin and fluid State of the Blood: It is preſcribed in an immoderate Flux of the Menſes, to be eaten with Bread and Butter, or drank like Tea; ſo uſed, it renders all manner of Poiſon of no Effect. The five firſt Species are commended as Preſervatives againſt the Peſtilence. Pimpinella is infuſed, alſo, in Wine, to be uſed where a Laxneſs of the Part requires Aſtrictions; and there is ſcarce, among Vulneraries, a better Plant for repreſſing the Flux of Blood in an Hæmoptoe: It is of ſingular Virtue in the Dyſentery, both by correcting the Acidity of the dyſenteric or peccant Matter, and by gently aſtringing the relaxed Fibres of the Inteſtines. There is prepared a Conſerve of the Flowers, which is of extraordinary Efficacy in the aboveſaid Diſorders. The Leaves infuſed in Wine, or common Water, are good for the Stone and Gravel in the Kidneys. *Hiſt. Plant. adſcript. Boerhaav.*

PIMPINELLA is, alſo, a Name for ſeveral Sorts of TRAGOSELINUM; which ſee.

PIMPINICHI, *Arbor lacteſcens.* J. B. On all the Coaſts of the *Indian* Continent, ſays *Monardes*, there grows a ſmall Tree, like an Apple-tree; the *Indians* call it *Pimpinichi*, from whoſe Branches being cut off, there immediately flows a milky Humour, ſomewhat thick and viſcous.

Three or four Drops of this Juice, being taken inwardly, purge very ſtrongly, Bile and Water, by Stool: It is drank in Wine; or the Powder of it, inſpiſſated, is ſwallow'd, but in a ſmall Quantity, becauſe of its Violence. Upon taking ſome Wine or Broth, its Operation is checked, and ceaſes on a ſudden: And the ſame is reported of the *Indian* Ricinus. *Hernandez. Raii H. P.*

PINASTER. See PINUS.

PINDAIBA *nonnullis Ibira.* Piſon. *Arbor baccifera Braſilienſis Fructu Piper reſipiente.* A very tall Tree growing in *Braſil*, which, on account of its acrimonious Fruit, and other Qualities, much reſembles the *Braſilian* Pepper: The Leaves are ſmall, acuminated, and like thoſe of the Olive-tree: The Berries are green in the rainy Months, but turn red in *December* and *January*, when they ripen, and fall off; but, being dried, they turn black, and burn the Tongue, and have an aromatic Taſte, being ſeparated from the black oblong Seed contained in them, which ſmells of Juniper.

The Berries, eaten faſting, corroborate a weak Stomach, and diſcuſs Flatulencies; bruiſed and applied, they heal the Bites of Serpents: Of the ſame, dried and pulverized, they prepare a Gargariſm againſt cold Affections of the Throat: They are boiled, in order to be kept in Shops, and ſerve inſtead of Pepper, for culinary Purpoſes. *Raii H. P.*

PINDOVA. The Name of a Species of Palm.

PINEA. A Name for the *Ananas aculeatus; fructu pyramidato; Carne Aurea.*

PINEALIS GLANDULA. The Pineal Gland. See CEREBRUM.

PINEATUM. A Name for various Compoſitions, the Baſis of which are Pine-nut-kernels.

PINEI *Nuclei Maluccani ſive purgatorii.* J. B. *Pinus Indica Nucleo purgante.* C. B. *Pinei Nuclei Maluccani.* Park. There grows, ſays *Acoſta*, in ſome Gardens of *Malabar*, and, alſo, wild in ſome Woods, a Tree of the Bigneſs of a Pear-tree, whoſe Leaves are of a Watry-green beneath, and of a Deep-green on the upper Face, and are very tender and ſoft: They are of a very acrid Taſte, and vellicate the Tongue for a long while afterwards: The Fruit is triangular, of the Size of a Filberd, and divided into many Capſules, containing each a round Sort of white Seed, equal to a Pine-kernel, when taken out of its Shell.

We are to conſider, ſays *J. Bauhine*, whether theſe are the cathartic Pine-nuts, of which *Monardes* gives the following Account: There is exported, he ſays, from *New Spain*, a Sort of Pine-kernels, with which the *Indians* purge themſelves, whoſe Example is imitated by very many in theſe Countries: They are like our Pine-kernels, growing in large *Strobili*, like the beardleſs Ears of Mayz, with a ſofter and blacker Shell than ours, round, white on the Inſide, fat, and ſweet in Taſte.

The *Indians*, as *Acoſta* ſays, take a couple of the Kernels, peel them, and then pound them, and mix them in Clyſters, againſt Difficulty of Urine, and the Pain of the Sciatica; or exhibit them in Cock-broth, for the Evacuation of putrid, ſliny, groſs, and cold Humours, and particularly for the Cure of an Aſthma: They anoint the Impetigo with theſe Kernels, bruiſed in Water; and ſo cure it; but they are very burning. The cathartic Pine-kernels, as *Monardes* ſays, purge very ſtrongly Bile, Phlegm, and Water; and, though milder than Filberds, excite Vomiting: When roaſted, they operate with leſs Violence, and fewer Gripes: They are exhibited in chronic Diſeaſes, and have a peculiar Virtue of evacuating groſs Humours. *Raii H. P.*

PINGUEDO, πιμέλη, πίαρ, πίτυρον, λίπος. Fat. See ADEPS. Officinal Fats are, alſo, called *Axungiæ.*

Fats in general are heating, moiſtening, emollient, abſterging, digeſtive, generative of Pus, and more or leſs anodyne. Every Fat in particular partakes of the Nature of the Animal whence it was taken; the weakeſt is the Fat of Swine, becauſe that Animal is of a cold and humid Nature: The Fat of a Calf is ſomewhat ſtronger, next that of the gallinaceous Kind, and the ſtrongeſt of all is the Fat of a Gooſe. It is to be obſerved, that whenever Fat is mention'd ſimply, or without any Note of Diſtinction, we are to underſtand it of the recent unſalted Fat of Swine.

Pinguedo mineralis; what it is, ſee *Theat. Chym. Vol.* 4.

PINGUICULA. A Plant ſo called by *Geſner*, becauſe its Leaves are fat to the Touch, as if rubbed over with Oil, or Butter. Of this *Ray* makes four Species; which are,

1. *Pinguicula Geſneri.* J. B. *Pinguicula ſive Sanicula Eboracenſis.* Ger. Park. *Sanicula montana Flore calcari donato.* C. B. BUTTERWORT, YORKSHIRE SANICLE.

The Leaves, which are ſix or ſeven in Number, and ſometimes more, ſpread themſelves upon the Ground, and are about two Inches long, and one broad, of a yellow Colour, inclining to a pale Green, fat to the Touch, and ſhining as if they were rubbed over with Butter or Oil. From amidſt the Leaves ariſe Pedicles, a Palm or more in Height, and bearing at the very Top a ſingle purple, violet, or white Flower, like a Violet, but

mono-

monopetalous, furniſhed with a long Spur, and divided into five Segments: It grows in moiſt and marſhy Places, and on plaſhy Downs, where Springs of Water abound.

2. *Pinguicula Flore albo minore, Calcari breviſſimo.* This was obſerved by *Ray*, in moiſt Places on the Tops of Mount *Jura*.

3. *Pinguicula Flore amplo purpureo, cum Calcari longiſſimo.* This is found in the ſame Places as the preceding.

4. *Pinguicula Cornubienſis Flore minore carneo.* The Leaves of this Species have their Margin reflexed, and, as it were, convolved; are almoſt pellucid, and ſtriated with red Veins. *Ray* obſerved this Species to grow in marſhy Places, about *Kilkhamton*, and other Places in *Cornwall*.

The Leaves, bruiſed, and applied, are ſaid to cure recent Wounds and Bruiſes: It is uſual for the Country-people to cure Chaps in their Hands, and Tumors and Fiſſures in the Udders of their Cows, with the Fat and buttery Juice of this Herb: Hence it took the Name of *Yorkſhire Sanicle*. The common Sort of People in *Wales* prepare from it a Syrup, with which they purge themſelves, and thoſe who belong to them; and, alſo, boil the Herb in Broths, for the ſame Purpoſe; for it purges Phlegm briſkly enough: They make, alſo, an Ointment of the ſame, which is of great Uſe in Obſtructions of the Liver. *Dalechampius* affirms, that the Root baked, and applied in Form of a Malagma, cures the Sciatica on the third Day, and that the ſame bruiſed and applied, cures all Sorts of Pains. *Camerarius* aſſures us, that it is a vulnerary Herb, and is of excellent Service in Hernias of Children. It dyes Hairs yellow, and ſerves Women inſtead of Gum for curling their Hairs. *Raii H. P.*

PINIPINICHI. The ſame as PIMPINICHI.

PINNA. A Wing. But the lateral and inferior Parts of the Noſe are called the *Pinnæ* thereof; and the ſuperior broad Part of the external Ear is, alſo, called the *Pinna* thereof.

PINNA, or PINNA MARINA, is a Sea Shell-fiſh of a conical Form, and ſeparated into two Parts, which are rough without, and of a darkiſh Colour, but ſmooth, green, and reſplendent within: Some of them are two Feet in Length, and about half a Foot in Circumference, towards the Middle. This Shell is found upon the Coaſt of the Sea, either among the Wrack, or the Sand. There are various Species of them, which contain a ſmall Fiſh, which is an excellent Aliment, and in which there are ſometimes found large Pearls.

From the ſuperior Part of the Shell, which terminates in a very obtuſe Point, ariſes a ſort of Cord, or ſmall Portion of reddiſh or dark-colour'd Silk, by ſome Naturaliſts, though, perhaps, not very properly, called *Byſſus*. This Cord helps the Animal ſometimes to fix itſelf to the Rocks: This Silk, when taken from the Fiſh, and prepared, is made into Stockings, and other Cloaths. The Fiſh, when eaten, excites Urine; and the Shell, when reduced to a Powder, provokes Urine, and renders the Patient coſtive. *Lemery des Drogues.*

PINNACULUM FORNICIS GUTTURALIS. The UVULA.

PINO. The Name of a ſort of Nettle, which grows in *Braſil*.

PINOGUACU. A Name for the two Species of MAMOERA.

PINUS.

The Characters are;

The Leaves are longer than thoſe of the Fir-tree, and always grow by Pairs, out of one common Sheath: The Flower is male, amentaceous, conſiſts of Stamina, and is produced at a Diſtance from the Fruit of the ſame Tree. The Fruit is a Cone, conſiſting of tetragonal Tubercles. Among the Squamæ, which are excavated into two Pits, are two Stones, frequently winged, incloſing an oblong Kernel.

Boerhaave mentions three Sorts of Pinus; which are,

1. Pinus; ſativa. *C. B. P.* 491. *Raii Hiſt.* 2. *Tourn. Inſt.* 585. *Boerh. Ind. alt.* 2. 179. *Pinus.* Offic. *Pinus ſativa ſive domeſtica.* Ger. 1173. Emac. 1355. *Pinus urbana ſive domeſtica.* Park. Theat. 1354. *Pinus officulis duris, foliis longis.* J. B. 1. 248. THE PINE-TREE.

This is a large ſpreading Tree, whoſe Branches are clothed with long, ſlender, ſharp-pointed, green Leaves, two growing together in a common Sheath, which are ſomewhat hollow on the Inſide; on the larger Branches grow large, looſe, yellow Catkins, which come early in the Spring; and, after them, large, oblong, round-pointed Cones, heavy and firm, compoſed of ſeveral high, brown, hard Scales, between which lie the Kernels, which are longiſh and white, of a pleaſant Taſte, included in an hard Shell, and covered immediately with a thin brown Skin. The Pine-tree grows wild in ſeveral Parts of *Italy*, and is uſually planted here in Gardens.

The Nuclei, or Kernels, which are principally uſed, are of a balſamic nouriſhing Nature, good for Conſumptions, Coughs, and Hoarſeneſs, reſtorative, and ſerviceable after long Illneſs; and, likewiſe, help the Strangury, Heat, and Sharpneſs of Urine. *Miller's Bot. Off.*

It has been a Subject much diſputed among the Learned, by what Name the *Pinus* of the *Latins* was called among the antient *Greeks*. *J. Bauhine* is perſuaded, that πεύκη (*Peuce*) is the antient *Greek* Name for the Pinus; and his Brother *Caſpar*, with *C. Cluſius*, *Bodæus a Stapel*, and other learned Men, are of the ſame Opinion. For my part, I am inclined to think, with our Countryman *Turner*, that the πεύκη of *Theophraſtus* is indeed the Tree which the *Latins* call *Pinus*; but that *Pliny* took the πίτυς (*Pitys*) of the *Greeks*, for the Pinus, becauſe that Author renders πιτυοκάμπαι (*Pityocampæ*) by *Erucæ Pinorum*, *The Caterpillers of Pine-trees*, not of the *Picea*, or Pitch-tree. As for the πίτυς (*Pitys*) of *Theophraſtus*, we are not certain what Tree it was; but *J. Bauhine* thinks it likely to be the *Pinaſter*, or Mountain-pine. The Occaſion of this Uncertainty, and Mutation of Names, ſeems to be owing to the *Arcadians*, who, as *Theophraſtus* writes, called πίτυς what the other *Greeks* called πεύκη: and gave the Name of πεύκη to what the reſt called πίτυς.

The Bark and Leaves of all the Species of Pine-trees are refrigerating and aſtringent; whence they are of Service in Dyſenteries, and an immoderate Flux of the Menſes. The Decoction or Infuſion of Pine-tree-tops in Beer, or any other proper Liquor, is ſuppoſed to be very effectual for the Stone in the Kidneys or bladder, and for the Scurvy, and other Affections of the Thorax. *Hoffman*, *Meth. Med.* relates how a thouſand Perſons were cured of ſcorbutic Affections, by the young and tender Shoots of the Pine-tree.

Pine-kernels are of a moſt delicious Taſte, and even preferable to Almonds; whence, in *Italy*, they are ſerved in at a ſecond Courſe: They are moderately hot and moiſt, maturating, lenitive, and fattening; their principal Uſe is in a Phthiſis and Tabes, becauſe they are very nutritive, though not very eaſy to be digeſted, as *Dodonæus* thinks: Taken either alone, or in Honey, or in any other Eclegma, they are good for a Cough, and inveterate Diſorders of the Breaſt, becauſe they are lenitive in Exaſperations; they are, alſo, of Service in nephritic Diſorders, the Strangury, Acrimony of Urine, and the like, becauſe they mitigate and remove Pains: They increaſe Milk, and the Semen; on which Account they revive languiſhing Nature, and excite to Venery, eſpecially when they are preſerved in Sugar. The whole Cone, or Strobilus, boiled with freſh Horehound, and afterwards boiled a ſecond time, with a moderate Addition of Honey, to a melleous Conſiſtence, is a proper Medicine, as *Galen* ſays, to promote Expectoration, is good for an old Cough, and conſumptive Diſpoſition, as we are aſſured, alſo, by *Dioſcorides*. The Water of the Cone is aſtringent, and, therefore, good to remove Wrinkles in the Face, to repreſs the Growth of the Breaſts, and for the Falling out of the Matrix, and other Diſorders of that Kind.

Coccalus, κόκκαλος, according to *Galen*, *Com.* 4. *in Lib. de R. V. I. A.* though uſed by *Hippocrates*, was not the Name for the Pine-nut, among the antient *Greeks*, but κῶνος (*Conos*); the modern Phyſicians, he ſays, almoſt univerſally call it στρόβιλος (*Strobilos*). The Coccalus, together with Myrrh, made into an Eclegma with Honey, is adviſed by *Hippocrates*, in the Book before-mentioned, for a Pleuriſy: And in the ſame Treatiſe, he directs an Eclegma to be prepared of the Coccalus and Galbanum, with *Attic* Honey, for a Peripneumony; to which laſt Place *Galen* had, undoubtedly, a reſpect in his Exegeſis, where he writes, *That moſt take the Coccalus to be the Kernel of the Strobilus.* But *Dioſcorides*, by way of Diminution, will have it to be the *Granum Cnidium.* Κόκκαλος, in *Heſychius*, is expounded by ῥόμβος (*Rhombus*) στρόβιλος (*Strobilus*), and πεύκη (*Peuce*). Pine-kernels are called by *Dioſcorides*, *Lib.* 1. *Cap.* 88. πιτυίδες (*Pityides*); by *Meneſithus*, in *Athenæus*, *Lib.* 2. ἀστακίδες (*Aſtracides*); alſo, πίτυινοι κῶνοι (*pityini Coni*), and πίτυινα κάρυα (*pityina Carya*), from *Alexander Myndius*, and *Diocles Caryſtius*. *Foeſius.*

2. Pinus; ſylveſtris. *Ger.* 1175. *Emac.* 1356. *C. B. P.* 491. *Raii Hiſt.* 2. 1399. *Boerh. Ind. A.* 2. 179. *Pinus ſylveſtris*, *Pinaſter.* Offic. *Pinus ſylveſtris vulgaris Genevenſis & Tæda.* J. B. 1. 253. THE MOUNTAIN PINE.

This Tree grows to be as tall, and as large, as the former; but differs from it, in having ſhorter and ſlenderer Leaves, ſmaller and ſharper Cones, including ſmaller Kernels, much of the Nature and Virtue of the former: It grows in great Plenty in divers Parts of *Germany*.

From this Tree is gotten what is called *common Turpentine*, (See TEREBINTHINA) which is whitiſh, thick, and opaque, like Honey, of a ſtrong Smell, and uſed principally by Farriers: From this is diſtilled the Oil of Turpentine, the finer and more volatile Part thereof, and what comes firſt, being called the

the *Spirit*: What is left at the Bottom of the Still is the common Roſin, which, if taken out, before it be drawn too high, and then waſhed in Water by a peculiar Method, is what we call *white*, or *yellow Roſin*. The black Roſin is the ſame, more evaporated, and not waſhed at all. See COLOPHONIA. The common Frankincenſe is reputed to be the native Roſin of this Tree, or the *Reſina Pini*, which is of a whitiſh-yellow Colour, whereof ſome Pieces are fat, ſoft, and whitiſh, and others hard, brittle, and more yellow. There is but little of this to be got pure at preſent, being adulterated by common yellow Roſin, by ſome way that crafty Knaves have found out. See THUS. The black and yellow Roſin are much of a Nature, being uſed in Ointments and Plaiſters. Mr. *Dale*, in the ſecond Part of his *Pharmacologia*, affirms, from Dr. *Kreig*, that the *Pix Burgundica*, or *Burgundy* Pitch of the Shops, is made of this Turpentine, after it has been boiled ſome time, and before it has arrived to the Hardneſs of Roſin: This is done, ſays he, in *Saxony*, where the white Roſin is made by boiling the Turpentine in large Veſſels, without Diſtillation. See PIX BURGUNDICA. *Miller's Bot. Off.*

3. Pinus humilis; Iulo purpuraſcente. *T.* 585. *Pinaſter Auſtriacus, tenuifolius.* J. B. 1. 255.

The Kernels, dried by the Fire, are good for an Aſthma, and deterge Ulcers in the Kidneys. The Decoction of the thin Leaves is commended in the Scurvy, where the Acrimony of the Humours requires Demulcents, and where the Veſſels are to be ſtrengthened, as the Caſe is in a Phthiſis. The expreſſed Oil of the Kernels has the ſame Virtues, as Oil of Almonds. *Hiſt. Plant. adſcript. Boerhaav.*

PINUS AFRICANA. A Name for the *Conocarpodendron*; *foliis argenteis, ſericeis, latiſſimis.*

Beſides the foregoing Species of *Pinus*, *Dale* mentions the following;

Pinus maritima. Offic. *Pinus ſylveſtris montana.* Ger. 1175. Emac. 1357. *Pinus maritima major.* C. B. P. 492. *Pinus ſylveſtris maritima, conis firmiter ramis adhærentibus.* J. B. 1. 243. Tourn. Inſt. 586. Raii Hiſt. 2. 1400. *Pinus maritima major fructifera.* Park. Theat. 1535. SEA PINE.

It grows in *Provence* and *Languedoc* in *France*; and the Bark, Leaves, and Reſin, which are the Parts in Uſe, agree in Virtues with thoſe of the *Pinus ſylveſtris*, or Mountain Pine.

Beſides theſe, the following Species are mentioned in *Ray*;

1. *Pinus cui Officula fragili Putamine ſive Cembro.* J. B. *Pinus ſylveſtris montana tertia.* C. B. *Pinus ſylv. altera fructifera, Tæda arbor ſorte. Pin. ſyl.* 2. Ger. deſcr.

It grows plentifully in the Country of the *Griſons*, where the Peaſants feed on the Fruit, which, though, in the Judgment of *Bellonius*, it has a ſofter, and more ſavoury Kernel, than the common Pine, it is yet ſo cheap, as not to be worth the Exportation; it grows frequently, alſo, on the Mountains of *Geneva*, and Mount *Cenis*, in the Paſſage from *France* to the Duchy of *Milan*, where it is known by the Name of *Elvi*. *Geſner* ſays, that it grows on the high Mountains of the *Griſons*, and of *Walliſſerland*; and that no Trees grow in higher Places.

2. *Pinaſter latifolius Iulis vireſcentibus aut palleſcentibus.* C. B. *Niger, latiore folio, Iulis palleſcentibus.* Park.

3. *Pinaſter Auſtriacus tenuifolius.* J. B. *Pinaſter tenuifolius, Iulo purpuraſcente.* C. B. *Tæda, ſeu Pſeudo-Pinus.* Ger. *Pinaſter* 3. *Auſtriacus.* Cluſ.

4. *Pinaſter conis erectis.* C. B. *Pinaſter Auſtriacus.* Ger. Emac. *Pumilus montanus.* Park. *An Pinus ſylveſtris.* Mugho *ſive* Krein. J. B. *Pinus tibulus ſeu tubulus.* Plin? *Sylv. Mugo.* Matth.

It grows on the Tops of the higheſt *Alps* in *Auſtria* and *Stiria*, among Stones and Rocks, where hardly any other Trees will appear.

5. *Pinaſter tertius Hiſpanicus humilis.* J. B. *Pinus maritima minor.* C. B. Park. *Pinaſter marit. minor.* Ger. Emac. *Cluſius* obſerved this Species only in the Kingdom of *Murcia* in *Spain*, and that very rarely.

6. *Pinus ſylv. maritima, conis firmiter ramis adhærentibus.* J. B. *Sylv. altera maritima.* Lob. Obſ. *An Pinaſter* 2. *Hiſpanicus.* Cluſ.?

7. *Pinus maritima major.* C. B. *Maritima major fructifera.* Park. *Sylveſtris montana.* Ger. *Pinus maritima Theophraſti. Lobelio.* J. B. In Trunk, Branches, and Leaves, it appears very like the *Pinaſter montanus*; only the Branches are glabrous, and blacker than the Trunk; and the Cone is of a ſcarlet Colour, and ſhorter and broader at the Top.

8. *Pinaſtrum alterum Hiſpanicum, vel minus Hiſpanicum.* Cluſ. *Pinus maritima major fructifera altera.* Park. *Marit. major.* This grows frequently in the Kingdoms of *Murcia* and *Valentia*, in *Spain*.

9. *Pinus ſylv. foliis brevibus glaucis, cum parvis albentibus, Hortulanis noſtris.* THE SCOTCH FIR, *i. e. Abies Scotica perperam dicta.* It grows ſpontaneouſly in the *Stirian Alps*.

PIP

This is now frequently cultivated in our Gardens and Groves, on account of its noble and beautiful Appearance.

10. *Pinus ſylveſtris, ſive, ut Bellonius, Picea ſylveſtris Idæ Troadis, cujus coni facile decidunt.* J. B. *Raii H. P.*

PIPA *arbor & fructus Sinenſis.* Michael Boym. *in Flora Sinenſi.* Jonſton. Dendrolog. The Name of a Plum-tree, which grows in *China*.

PIPER ALBUM. Offic. Ger. 1353. Emac. 1538. Park. Theat. 1603. J. B. 2. 181. *Piper rotundum album.* C. B. P. 411. Raii Hiſt. 2. 1342. *Piper album, Leucopiper.* Mont. Exot. 9 WHITE PEPPER. See PIPER NIGRUM.

PIPER NIGRUM. Offic. Ger. 1353. Emac. 1538. Park. Theat. 1603. J. B. 2. 181. *Piper rotundum nigrum.* C. B. P. 411. Raii Hiſt. 2. 1341. *Lada, aliis Molanga ſive Piper aromaticum.* Piſ. Mant. A. 492. *Piper rotundum ex Malabara foliis latis quinque nervis albicantibus.* Herm. Muſ. Zeyl. 52. *Molagocodi.* Hort. Mal. 7. 23. Tab. 12. BLACK PEPPER.

The Plant which bears Pepper climbs and twiſts itſelf about any thing that is put for its Prop or Support, bearing alternately large, oval, but ſharp-pointed Leaves, full of large Nerves, oppoſite to which grow long Spikes of ſmall monopetalous Flowers, cut into three Parts, ſucceeded by Bunches of the Grains of Pepper, which are round, of a dark-brown Colour, having a wrinkled Bar on the Outſide. There has been a Diſpute among the Writers of the Materia Medica, whether the white and black Pepper are the Fruit of one and the ſame Plant, or whether they be two diſtinct Species. The more antient, as *Garcias ab Horto, Parkinſon, C. Bauhine*, were of Opinion, that they were different; but *Piſo*, in his *Mantiſſa aromatica*, and ſince his Time, *Herb. de Jager*, in the twenty-ſixth Epiſtle of the *India literata*, in the Appendix to the *Muſeum Valentini*, plainly demonſtrate, that they are but one Species; and that the white is made of the ripeſt black Pepper, of which they put a Quantity in a deep Trench, where it lies for two or three Days, till the Bark is rotted, when they pour in a Quantity of Water, and, ſtirring it about, ſeparate the Bark which ſwims a-top, and dry the Fruit with white Aſhes, which they ſeparate from, when dry, with large Fans, as we with new Corn.

Pepper is heating and drying, expelling Wind, and of great Uſe againſt Coldneſs and Windineſs of the Stomach, and the Colic; it ſtrengthens the Nerves and Head, and helps the Sight; outwardly it is good for the Tooth-ach, and for cold Affections of the Nerves, and Pains in the Limbs. Pepper ought not to be powdered fine, but only groſly broken, when it is eaten with any Food, or uſed to ſeaſon it. *Miller's Bot. Off.*

Pepper is an aromatic Fruit, of an heating and drying Quality, produc'd in Grains commonly, and us'd in Sauces and Seaſonings.

This Fruit, ſo well known in *Europe*, is produc'd by a Plant or Shrub, which grows in various Parts of the *Eaſt Indies*.

The Plant which bears it, is weak and creeping; a Circumſtance which obliges thoſe who cultivate it to plant it at the Foot of large Trees, ſuch as the Areca, and Coco-nut-tree. Its Leaves, in Figure, reſemble thoſe of Ivy, but are leſs green, more yellow, of a ſtrong Smell, and pungent Taſte.

The Pepper comes forth in ſmall Cluſters, like our Gooſberries; and the Grains of which theſe Cluſters are compos'd, at firſt appear green; then they become red, in proportion as they ripen; and at laſt black, or ſuch as they come to us, after they are left expos'd to the Heat of the Sun for ſome time.

There are not two Species of Pepper, one white, and the other black; and we have good Reaſon to embrace this Opinion notwithſtanding what Mr. *Pomet*, in his *Hiſtoire des Drogues*, has ſaid to the contrary, ſince Mr. *Dillon*, a celebrated Phyſician, and Author of the Hiſtory of the Inquiſition of *Goa*, aſſures us, that all the Difference between the white and black Pepper is, that the latter has its Skin, whereas the former wants the Skin; which is taken off by beating it before it is entirely dry, or by ſuffering it, after it is dry, to ſoak for ſome time in Water.

Tho' Pepper is produc'd in various Parts of the *Indies*, yet it grows moſt copiouſly between *Rajapour*, and the Cape of *Camarin*. The Pepper of *Malabar*, or that produc'd between Mount *Eli* and the Southern Extremity of the Coaſt, is ſomewhat ſmaller than the other; but produc'd in ſuch large Quantities, that *Europe* is principally ſupplied with it.

The black Pepper, conſumed in *Europe*, is of three Sorts; that of *Malabar*, and that of *Jamby*, and that of *Belipatham*. But this laſt is leaſt eſteem'd in *Europe*, on account of its Smalneſs and Drineſs; two Circumſtances which recommend it to the *Indians*, who think ſmall Pepper leſs hot than the large Kind.

The white Pepper ought to be choſen large, well-nouriſh'd, weighty, and without Mixture of black Grains or Rubbiſh; which when reduc'd to a Powder, is of a beautiful grey or a whitiſh Colour.

As for black Pepper, which ought to be poſſeſs'd of almoſt all the Qualities of the white already enumerated, we muſt, alſo, take care that the Grains be not wrinkled; that there be a large Quantity of white Grains among them; and that the largeſt Grains have not been ſeparated, in order to be whiten'd, a Practice very common in *Holland*, *Rouen*, and *Paris*.

As a great Part of the Pepper, whether white or black, is ſold beaten, it is eaſy for Perſons of a fraudulent Diſpoſition to ſophiſticate it, which Retailers generally do by mixing, with the black Pepper, the grey Spices of *Auvergne*; *Maniguette*, a Species of *African* Pepper; the Duſt of Pepper; and the Cruſt of Bread. With the white Pepper they mix white Spices, or black Pepper whiten'd; ſo that it is very difficult to diſtinguiſh the ſophiſticated from the genuine Kind; for which Reaſon we ought to buy from Perſons of Honeſty and Skill.

Druggiſts and Spice merchants ſell various other Kinds of Pepper, deſcrib'd by Travellers in their Relations; ſuch as the Pepper of *Madagaſcar*, that of *Maſcarine*, or the Iſland of *Bourbon*; the Pepper of *China*; the Long-pepper of the *Indies*, *Ethiopia*, and *America*; *Guinea* Pepper, *Jamaica* Pepper, the Pepper of *Thevet*, and that of *Africa*.

The Pepper of *Madagaſcar* is white, and grows on a Plant, which creeps on the Ground, and whoſe Stalk and Leaves have the ſame Smell with the Fruit, which ripens in the Months of *Auguſt*, *September*, and *October*.

The Pepper of *Maſcarenne*, which is, alſo, produc'd in the Iſland of *Java*, is call'd Cubebs, or Pepper with a Tail. It exactly reſembles the black Pepper, except that it is larger, and has a Tail. The Plant which produces it, creeps on the Ground; and its Fruit, which ought to be choſen large, well nouriſh'd, and without Wrinkles, adheres to it in the Form of Cluſters.

The *China* Pepper, deſcrib'd by Father *le Compte* in his Memoirs, has the ſame Proportion with that of the *Indies*. The Tree which produces it, is as large as a Nut-tree. Its Fruit is as large as a Pea, and of a greyiſh Colour, mix'd with red Streaks. When it is ripe, it opens ſpontaneouſly, and contains a ſmall Nut, as black as Jet; after it is gather'd, it is expos'd to the Sun, in order to be dried. The Nut, which is of a very ſtrong Taſte, is thrown away, and the Huſk or Bark only kept. The Smell of the Pepper-tree is ſo ſtrong, that the Fruit muſt be gather'd at different Times, leſt thoſe employ'd in that Work ſhould be injur'd by it.

The Long-pepper, which is a kind of Congeries of many ſmall Grains, ſtrongly united to each other, grows upon a Shrub, whoſe Leaves are ſlender, green, and placed upon a ſhort Stalk.

This Pepper is of three kinds, that of the *Eaſt Indies*, that of *America*, and that of *Ethiopia*, which is call'd Grains of *Zelim*. But that of the *Indies* is the only true Long-pepper, ſince the others bear but little Reſemblance to it.

Good Long-pepper ought to be recent, well-nouriſh'd, large, weighty, difficult to be broken, not rotten, without Rubbiſh or a Mixture of Earth. It is us'd in Medicine, in various *Galenical* Compoſitions, and is an Ingredient in the Theriaca. It is, alſo, ſometimes mixed with Spices.

The *Guinea* Pepper is of a red Colour, reſembling that of Coral. It is cultivated in *Languedoc*, and eſpecially in the Villages about *Nimes*. It is commonly found in the Shops of the Druggiſts and Grocers. The Vinegar-makers uſe it for making their Vinegar. Some, alſo, preſerve it with Sugar; it ought to be choſen recent, in Pods, which are beautiful, dry, ſound, and very red.

There are four Sorts of this Pepper: The firſt is call'd *Chilchotes*; the ſecond, which is very ſmall, is call'd *Chilterpin*; and theſe two Kinds are of an acrid and highly pungent Taſte. The third is call'd *Tenalchiles*, which is moderately hot, and which the *Indians* eat, like other Fruit, with Bread. The fourth is call'd *Chilpelagua*: This laſt is neither ſo pungent as the two firſt, nor ſo mild as the third; this is the Species ſo much eſteem'd by the *Spaniards*, and generally us'd by them in preparing their Chocolate.

There is, alſo, another Species of this Pepper, which only grows about *Peru*, where it is call'd *Agy*. A large Quantity of this Species is cultivated in a ſmall Plain, about ſix Leagues in Circumference, near the Village of *Arica*, on the Coaſt of *Peru*, and in the Valleys of *Sama*, *Tacna*, and *Cocumba*. Tho' theſe four Places are of a ſmall Extent, and there is a great Demand for this Kind of Pepper, yet they furniſh every Year, as much as draws more than ſix hundred thouſand Piaſters; which would appear incredible, if the Excrements of the Bird call'd *Guana*, with which the *Peruvians* dung their Land, did not render it ſo fertile, that the Grains ſown in it, and eſpecially the *Agy*, yield four or five hundred for one.

The *Jamaica* Pepper is the Fruit produc'd by the Tree which furniſhes us with the *Indian* Wood.

The Pepper of *Thevet*, which the *Dutch* call *Amomi*, on account of its Reſemblance to the *Amomi*, or *Jamaica* Pepper, is a ſmall round Fruit, as large as the white Pepper, a little roundiſh, and with a Species of ſmall Crown at one of its Ends. It is, alſo, called the ſmall round Clove, becauſe its Taſte reſembles that of the true Clove. *Savary. Dict. de Comm.*

As for the *African* Pepper, which is call'd *Maniguette*, *Malaguette*, or *Cardamoms*, ſee the Article CARDAMOMUM.

PIPER JAMAICENSE. *Jamaica* Pepper. See CARYOPHYLLUS.

PIPER INDICUM. *Guinea* Pepper. See CAPSICUM.

PIPER LONGUM. Offic. Ger. 1355. Emac. 1539. Park. Theat. 1604. Ogilb. Chin. 1. 226. J. B. 2. 185. Raii Hiſt. 2. 1343. *Piper longum orientale*. C. B. P. 412. *Piper longum Piſtolochiæ foliis abſque pediculis, Maderaſpatana*. Pluk. Phytog. Tab. 104. *Pimpilim*. Piſ. Mant. A. 182. *Tlatlancuaye ſive Piperis longi Species* II. Hern. 126. *Catta-tripali*. Hort. Mal. 7. 27. Tab. 14. *Arbor Piperifera fructu longo*. Jonſ. Dendr. 178. *Acapatli*. Laet. 231. LONG-PEPPER.

This is a long Fruit, ſomewhat reſembling the *Iulus* or Catkin of the Haſel, but hard and firm, conſiſting of ſeveral ſmall roundiſh Grains, ſet together in a ſpiral Order, of a browniſh Colour, and an hot biting Taſte; they grow upon a Plant, which twiſts and winds itſelf about any thing, that is in its Way, having large, oblong, round-pointed Leaves, ſet alternately on the Stalks; and oppoſite to them grow monopetalous Flowers, divided into five Segments, which are ſucceeded by this Fruit. It grows in *Java* and *Malabar*, and other Parts of the *Eaſt Indies*.

As in Taſte, ſo in Virtue, it imitates the black Pepper; warming and comforting the Stomach, expelling the Wind, and promoting Digeſtion. It is, likewiſe, accounted alexipharmic, and is an Ingredient in the *Theriaca Andromachi*. *Miller's Bot. Off.*

PIPERELLA. A Name for the *Marum*; *Hiſpanicum*; *nigrum*; *flore purpureo*.

PIPERITIS. A Name for the *Lepidium*, Dittander.

PISCATORIS EMPLASTRUM. The Name of a Plaiſter deſcrib'd in *Aetius*, *Tetrabiblos*, 4. *Serm.* 3. *C.* 18.

PISCATORIS MEDICAMENTUM. The Name of a compound Medicine deſcrib'd by *Actuarius*, *L.* 6. *C.* 9.

PISO. A Mortar. *Caſtellus*.

PISONIA. Fingrigo *vulgo*.

The Characters are;

It is male and female in different Plants; the male Flowers conſiſt of a great Number of Stamina, and have no Petals: The female Flowers conſiſt of one Leaf, which is Bell-ſhaped, and divided at the Top into five Parts; from whoſe Cup ariſes the Pointal, which afterwards becomes an oblong, angular, chaneled Fruit, containing oblong Seeds.

Miller mentions two Species.

1. *Piſonia aculeata mas*. Houſt.

2. *Piſonia aculeata, fructu glutinoſo, & racemoſo*. Plum. Nov. *Gen*.

Theſe Plants are ſeminal Variations, which ariſe from the Seeds of the ſame Plant, but as they were not diſtinguiſhed by any of the Botaniſts, till the late Dr. *Houſtoun* obſerved their Difference; and therefore the different Sexes are here mentioned as ſeparate Plants.

The Name of this Plant was given by Father *Plumier*, in Honour to Dr. *William Piſo*, who publiſhed a Natural Hiſtory of *Braſil*. The Name of *Fingrigo* is what the Inhabitants of *Jamaica* know it by.

Theſe Plants are very common in the *Savannahs*, and other low Places, in the Iſland of *Jamaica*, as, alſo, in ſeveral other Places of the *Weſt Indies*; where it is very troubleſome to whoever paſſes through the Places of their Growth, by faſtening themſelves by their ſtrong crooked Thorns, to the Cloaths of the Perſons; and their Seeds, being glutinous, alſo, faſten themſelves to whatever touches them: So that the Wings of the Ground-doves, and other Birds, are often loaded with the Seeds, ſo as to prevent their flying; by which means they become an eaſy Prey.

It riſes about ten or twelve Feet high, with a pretty ſtrong Trunk; but the Branches are long and ſlender, whereby being unable to ſupport themſelves, they generally twiſt about whatever Plants are near them. *Miller's Dictionary*.

PISSANTHOS. The ſame as ORRHOPISSA.

PISSASPHALTOS. See BITUMEN.

PISSE. πίσσα. Pitch.

PISSELÆUM, πισσέλαιον, (from πίσσα, Pitch, and ἔλαιον, Oil) Oil of Pitch, is prepared of Pitch by Separation of its watry Part, which ſwims thereon like Whey upon Milk. It is taken off while the Pitch is in boiling, by ſpreading over it clean Wool, which, as ſoon as it is throughly moiſten'd with the aſcending Vapour, is wrung into a Veſſel; and this is repeated as long as the Pitch is in boiling.

The *Piſſelæum* is effectual for the ſame Purpoſes as Tar. A Cataplaſm thereof, prepared with Meal of Barley, reſtores the Hairs in an Alopecia; Tar has the ſame Effect; and, beſides, cures Scabs and Ulcers in Cattle. *Dioſcorides*, *Lib.* 1. *Cap.* 95.

PISSELÆUM INDICUM. Offic. *Bitumen Barbadenſe*. Boerh. Chem. *Pix liquida Barbadenſis*, Pharmacopolis. Lond. *Pis Barbados*. Boerh. Theſaur. Pharm. 108. BARBADOES-TAR.

This is brought from the Iſland, whoſe Name it bears; where it floats on the Surface of the Water: It is of a blackiſh-red Colour, of a diſagreeable Smell, and of the Conſiſtence of liquid

liquid Pitch. It is poſſeſs'd of a ſudorific Quality, and is good for Diſorders of the Lungs and Stomach. By adding a ſmall Quantity of the Oil of Aniſe, to this Bitumen, the *London* Apothecaries prepare a Balſam, which they ſell for the *Balſam of Chili*. *Dale*.

Boerhaave, in his Chymiſtry, ſeems to think *Barbadoes* Tar a vegetable Preparation, ſince, like the *Oleum Terræ* of the *Indies*, it conſiſts of the expreſs'd Oil of Coco-nuts mix'd with medicated Earths.

This, ſays *Quincy*, ſeems to be what paſſes in the Shops by the Name of *Barbadoes* Tar. It has a ſtrong Scent, not unlike the common Tar, and is not very pleaſant to the Sight or Taſte; but 'tis certainly a good Balſamic, and where the Stomach will diſpenſe with it, will do great Service in ſome Diſorders of the Breaſt. It is effectual in obſtinate tickling Coughs, and ſometimes ſucceeds where more elegant Medicines have failed. Some commend it in Burns, Scalds, and Inflammations; but the regular Practice does not much juſtify ſuch Uſe externally. Among the Country-people, it is in great Requeſt for ſcal'd Heads, which is a Diſeaſe troubleſome to cure, and often puzzles a good Phyſician. It is with ſome, alſo, a Secret to apply to the Soles of the Feet in Agues, and, alſo, to the Wriſts; and I have known Inſtances where it has ſucceeded. That Medicine commonly ſold by the Name of Oil of Spike, is nothing but Oil of Turpentine tinged with this Simple. See PICTONUM COLICA.

PISSEROS, πισσηρὸς, from πίσσα, Pitch, is an Epithet of a Cerate, called by *Hippocrates* πισσηρὴ κηρωτὴς (*piſſere cerotes*), pitchy Cerate, and order'd by him to be apply'd to Ulcers affected with an Inflammation, and as an Anodyne. It was prepared, as *Galen* writes, *Comment.* 1. *in Lib. de Fract.* of Wax melted with Oil, or Oil of Roſes, and dry Pitch. *Hippocrates* ſometimes expreſſes it ſimply by πισσηρὴ (*Piſſere*), and ſometimes with the Addition of κηρωτὴς (*Cerotes*), πισσηρὴ κηρωτὴς.

PISSITES, πισσίτης, Wine of Pitch, is prepared of Tar and Muſt. The Tar is firſt to be waſhed with Sea-water, or Brine, till it becomes white, and the Sea-water runs off pure; after which it is to be waſhed with ſweet Water. Then to eight *Congii* of Muſt, put an Ounce or two of this Tar, and ſuffer it to ferment, and then to ſettle, after which pour it into Veſſels.

This ſort of Wine is of an heating Quality, helps Concoction, is abſterſive and pectoral; on which account, it is of Efficacy in Pains of the Thorax, Belly, Liver, Spleen, and Uterus, if unattended with a Fever; alſo, in inveterate Defluxions, and deep Exulcerations. It is, alſo, good againſt a Cough, Slowneſs of Digeſtion, Inflations, and an Aſthma; and is of Service in Luxations, eſpecially if applied in raw Wool [οἰσυπηρός]. *Dioſcorides*, *Lib.* 5. *Cap.* 48.

PISSOCEROS, πισσόκηρος. The Wax with which Bees line their Hives, and which is the Foundation of their Combs.

PISSOSIS. Pication. See PICATIO.

PISTACHIA. A Name for the *Terebinthus*; *Indica*; *Theophraſti*.

PISTATIO, according to *Caſtellus*, is the covering any Materials, included in a proper Veſſel, with Paſte, in order to their being bak'd, or boil'd.

PISTILLUM. A Peſtle.

PISTOLOCHIA. See *Ariſtolochia*, and *Serpentaria Virginiana*.

PISUM.

The Characters are

It has a long inflated Pod, full of roundiſh Seeds; the lower Part of the Stalk is fiſtulous; the Leaves are ſome of them, as it were, perforated by the Stalk; the other are pinnated, and end in a Tendril.

Boerhaave mentions twenty-ſix Species of *Piſum*, none of which have any medicinal Virtues aſcrib'd to them at preſent, that I know of, except the ſixth; which is,

Piſum; arvenſe, fructu albo. *Tourn. Inſt.* 394. *Boerh. Ind. A.* 2. 40. *Piſum.* Offic. *Piſum arvenſe flore candido, fructu rotundo, albo.* C. B. P. 342. *Piſum minus.* Ger. 1045. Emac. 1219. *Piſum vulgare parvum album arvenſe.* J. B. 2. 297. Raii Hiſt. 1. 891. *Piſum ſylveſtre primum.* Park. Theat. 1057. Raii Synop. 3. 318. COMMON WHITE PEAS.

Peas are more uſed in the Kitchen, than in the Shop, being known to every body to have whitiſh-green Leaves, conſiſting of two or three Pair of large oval Pinnæ, with Claſpers at the Ends; the Stalks are weak, angular, and not able to ſupport themſelves. The Flowers are white and papilionaceous; and the Peas, when ripe, round and white: They are planted in Fields and Gardens, flowering in *May*, and the Fruit is eat in *June*.

Peas, when green, are a pleaſant grateful nouriſhing Food, but ſomewhat flatulent and windy, as well as when dry. They are good to ſweeten the Blood, and correct ſalt ſcorbutic Humours, either eaten raw, or boiled. *Miller's Bot. Off.*

Peas are a Puls much uſed for Food; the ſmaller and greener they are, the better is their Taſte. They are, alſo, dried for keeping; but then they have not the Taſte they had before.

They produce the greateſt Part of their good Effects by the Help of their oily balſamic Parts, which, ſheathing up ſharp Humours of the Breaſt, ſtop Coughs; and, by eaſily condenſing in the Vacuities of the ſolid Parts, repair and nouriſh them. The firſt Porridge, or boiling of Peas, is ſoftening and laxative, becauſe 'tis filled with the more diſſoluble Salts of this Pulſe; theſe Salts, irritating and pricking the inteſtinal Glands, cauſe them to let paſs through their Pores a greater Quantity of ſerous Matter. Peas contain a viſcous and thick Juice, which cauſes Wind, and produces groſs Humours; and, therefore, they are not good for thoſe that are troubled with Gravel. *Lemery on Foods.*

Broth of Peas, not only renders the Body ſoluble, but, alſo, procures a more free and copious Evacuation of the Lochia. It is, alſo, beneficial in nephritic Pains, according to *Simon Paulli*, in his *Quadripartitum Botanicum.* Some, alſo, with Succeſs, uſe a Decoction of Peas, in order to cure cutaneous Diſorders, and Pimples. *Hoffman. Præſt. Remed. Domeſt.*

PITACIUM. A large Cloth, impregnated, or ſpread over, with ſome Medicine, in order to be applied to a Part affected.

PITHA. A Name in *Boerhaave* for the *Cereus*; *ſcandens*; *minor trigonus*; *articulatus*; *fructu ſuaviſſimo.*

PITINE. A Name for the APHACA; which ſee.

PITOMA. The Name of a large Tree, which grows in *Braſil*, bearing a kind of Apple, of an aſtringent, bitter Taſte, but not eatable, and of no Uſe in Medicine.

PITTONIA.

The Characters are;

It hath a globular bell-ſhaped Flower, conſiſting of one Leaf, which is cut into ſeveral Segments at the Brim; from whoſe Cup ariſes the Pointal, which afterwards becomes a ſoft ſpherical Berry full of Juice, incloſing two Seeds, which are, for the moſt part, oblong.

Miller mentions ſeven Species, all of which grow in the warmeſt Parts of *America*, where the firſt Sort grows to the Height of twelve or fourteen Feet, and divides into many Branches, ſo as to form a ſmall Tree. The ſecond, fifth, and ſeventh Sorts grow to the Height of eight or nine Feet, and produce many Branches near their Roots, ſo as to form thick Buſhes. *Miller's Dict.*

PITTOSIS. The ſame as PICATIO.

PITUITA. Phlegm. See PHLEGMA.

PITUITARIA GLANDULA. The Pituitary Gland.

PITYIDES, πιτυίδες, a Name for the Fruit, or Kernels, contained in the Cones of the *Pinus*, and *Picea*. Theſe Kernels are of an aſtringent and ſomewhat heating Quality, and are good for a Cough, and other Affections incident to the Region of the Thorax, whether taken alone, or with Honey. *Dioſcorides*, *L.* 1. *C.* 87.

PITUINA, πιτυΐνη. The Reſin of the Pitch-tree.

PITYLISMA. A Species of Exerciſe mentioned by *Galen*, *de Sanitate tuenda*, *Lib.* 2. *Cap.* 10. It conſiſted in walking on Tiptoes, lifting up the Hands above the Head, and moving them ſwiftly in different Directions.

PITYOCAMPE, πιτυοκάμπη. A Species of Caterpiller, which is found on the Pitch-tree, and to which *Galen* aſcribes the Virtues of Cantharides, *de Simpl. Facult. L.* 11.

PITYRIASIS. A ſcurfy Diſorder of the Head, Chin, and Eye-brows, called, alſo, *Porrigo*. See LEPRA. From πίτυρον, Bran.

PITYROIDES. An Epithet for a ſort of Sediment in the Urine, reſembling Bran.

PITYS, πίτυς. The Pine.

PITYUSA. See TITHYMALUS.

PIX. Pitch. This is a Species of Gum obtained from the Pine-tree, by making Inciſions in it. It receives different Names according to its different Preparations, Colours, and Qualities. When it firſt flows from the Tree, it is called *Barras*, but is afterwards diſtinguiſhed into two Sorts, which have different Names: That which is moſt beautiful and clear, is called *Galipot*; and that which is more full of Fæces, and of a worſe Colour, is called *Marbled Barras*. The former of theſe, or the Galipot, ſerves to make all the different Species of Pitch deſcribed in this Article.

The pinguious Pitch, which is, alſo, called *White Burgundy Pitch*, is *Galipot* melted with Oil of Turpentine. Some, however, aſſert, that the *Burgundy* Pitch flows naturally from reſinous Trees, in the Mountains of *Franche-Comté*.

Reſin is, according to ſome Authors, a Gum diſcharged from the Turpentine-tree, the Larch-tree, the Maſtich-tree, or the Cypreſs: But the Opinion of others is far more probable, who, from Experience, aſſert, that it is Galipot, boiled to a certain Conſiſtence, and reduced to a Maſs of any determinate Weight.

The beſt Reſin comes from *Bayonne* and *Bourdeaux*. It ought to be choſen dry, white, free from Water and Sand.

Black Pitch, which is properly that known by the Name of *Pitch*, is only *Galipot*, prepared in a particular manner, by put-

ting into it, when it is quite warm, a certain Quantity of Tar, in order to render it black. There are two Kinds of it, one hard, and another ſoft, which only differ in this Circumſtance.

Mr. *Wheler*, in his Voyages, has given another Method of preparing black Pitch, uſed in the *Levant*, and which is not much different from that given by *Furetiere* in his Dictionary.

He orders us to prepare a Heap of Earth, in which we are to make an Hollow two Ells in Diameter at the Top, but which becomes gradually narrower, as it approaches to the Bottom. This Hollow is to be filled with ſmall Portions of ſuch Branches of the Pine-tree, as contain moſt Gum, laid above each other till the Hollow is full. Then the upper Part is to be covered with Fire, which burns to the Bottom: By which means the Pitch is diſcharged from a ſmall Hole made at the Bottom for that Purpoſe.

The beſt black Pitch comes from *Norway* and *Sweden*, to which that made in *France* is by no means comparable.

The Goodneſs of hard black Pitch conſiſts in being of a ſhining black Colour, brittle, dry, and forming, as it were, a Rays, when it is broken.

What is called the *Pix Navalis* in Medicine, ought to be the Pitch ſcraped off from Ships; but 'tis certain, that moſt Apothecaries uſe the common black Pitch in its ſtead.

From the black Pitch there is obtain'd an Oil, which, on account of its ſingular Virtues, is called the *Baum of Pitch*. *Diction. de Commerce.*

PIX LIQUIDA. Tar.

Dr. *Berkeley*, Biſhop of *Cloyne*, having lately publiſhed an Account of the Virtues of Tar-water, which has conſiderably raiſed the Attention of the Public, I think myſelf obliged to give a ſhort Abſtract of his Book upon this Subject, eſpecially as the Author is a Perſon well known in the learned World.

In certain Parts of *America*, Tar-water is made by putting a Quart of cold Water to a Quart of Tar, and ſtirring them well together in a Veſſel, which is left ſtanding till the Tar ſubſides to the Bottom. A Glaſs of clear Water, being poured off for a Draught, is replaced by the ſame Quantity of freſh Water, the Veſſel being ſhaken, and left to ſtand as before. And this is repeated for every Glaſs, ſo long as the Tar continues to impregnate the Water ſufficiently, which will appear by the Smell and Taſte. But as this Method produceth Tar-water of different Degrees of Strength, I chooſe to make it in the following manner: Pour a Gallon of cold Water on a Quart of Tar, and ſtir and mix them throughly with a Ladle, or flat Stick, for the Space of three or four Minutes; after which, the Veſſel muſt ſtand eight-and-forty Hours, that the Tar may have time to ſubſide; when the clear Water is to be poured off, and kept for Uſe; no more being made from the ſame Tar, which may ſtill ſerve for common Purpoſes.

This cold Infuſion of Tar hath been uſed in ſome of our Colonies, as a Preſervative, or Preparative, againſt the Small-pox; which foreign Practice induced me to try it in my own Neighbourhood, when the Small-pox raged with great Violence. And the Trial fully anſwered my Expectation; all thoſe within my Knowledge, who took the Tar-water, having either eſcaped that Diſtemper, or had it very favourably. In one Family there was a remarkable Inſtance of ſeven Children, who came all very well through the Small-pox, except one young Child, which could not be brought to drink Tar-water, as the reſt had done.

Several were preſerved from taking the Small-pox by the Uſe of this Liquor; others had it in the mildeſt manner; and others, that they might become ſuſceptible of the Infection, were obliged to intermit drinking the Tar-water. I have found it may be drank with great Safety and Succeſs for any Length of Time, and this not only before, but, alſo, during the Diſtemper. The general Rule for taking it is, to drink about half a Pint Night and Morning, on an empty Stomach; which Quantity may be varied, according to the Caſe and Age of the Patient, provided it be always taken on an empty Stomach, and about two Hours before or after a Meal.

It ſeemed probable, that a Medicine of ſuch Efficacy, in a Diſtemper attended with ſo many purulent Ulcers, might be, alſo, uſeful in other Foulneſſes of the Blood: Accordingly, I tried it on ſeveral Perſons infected with cutaneous Eruptions and Ulcers, who were ſoon relieved, and ſoon after cured. Encouraged by theſe Succeſſes, I ventured to adviſe it in the foulеſt Diſtempers, wherein it proved much more ſucceſsful than Salivations and Wood-drinks had done.

Having tried it in a great Variety of Caſes, I found it ſucceed beyond my Hopes, in a tedious and painful Ulceration of the Bowels, in a conſumptive Cough, and (as appeared by expectorated Pus) an Ulcer in the Lungs, in a Pleuriſy and Peripneumony. And, when a Perſon, who for ſome Years had been ſubject to eryſipelatous Fevers, perceived the uſual forerunning Symptoms to come on, I adviſed her to drink Tar-water, which prevented the Eryſipelas.

PIX

I never knew any thing ſo good for the Stomach as Tar-water: It cures Indigeſtion, and gives a good Appetite. It is an excellent Medicine in an Aſthma. It imparts a kindly Warmth, and quick Circulation, to the Juices without heating; and is therefore uſeful, not only as a Pectoral and Balſamic, but, alſo, as a powerful and ſafe Deobſtruent in cachectic and hyſteric Caſes. As it is both healing and diuretic, it is very good for the Gravel. I believe it to be of great Uſe in a Dropſy, having known it cure a very bad Anaſarca in a Perſon, whoſe Thirſt, though very extraordinary, was in a ſhort time removed by the drinking of Tar-water.

The Uſefulneſs of this Medicine in inflammatory Caſes is evident, from what has been already obſerved. And yet ſome, perhaps, may ſuſpect, that as the Tar itſelf is ſulphureous, Tar-water muſt be of an hot inflaming Nature. But it is to be noted, that all Balſamics contain an acid Spirit, which is, in Truth, a volatile Salt. Water is a Menſtruum that diſſolves all Sorts of Salts, and draws them from their Subjects. Tar, therefore, being a Balſam, its ſalutary Acid is extracted by Water, which yet is incapable of diſſolving its groſs reſinous Parts, whoſe proper Menſtruum is Spirit of Wine. Therefore, Tar-water, not being impregnated with Reſin, may be ſafely uſed in inflammatory Caſes; and, in fact, it hath been found an admirable Febrifuge, at once the ſafeſt Cooler and Cordial.

The volatile Salts, ſeparated by Infuſion from Tar, may be ſuppoſed to contain its ſpecific Virtues. Mr. *Boyle*, and other later Chymiſts, are agreed, that fixed Salts are much the ſame in all Bodies. But it is well known, that volatile Salts greatly differ; and the eaſier they are ſeparated from the Subject, the more they poſſeſs of its ſpecific Qualities. Now the moſt eaſy Separation is, by Infuſion of Tar in cold Water, which to Smell and Taſte ſhewing itſelf well impregnated, may be preſumed to extract and retain the moſt pure, volatile, and active Particles of that vegetable Balſam.

Tar was by the Antients eſteemed good againſt Poiſons, Ulcers, and the Bites of venomous Creatures; alſo, for phthiſical, ſcrophulous, paralytic, and aſthmatic Perſons. But the Method of rendering it an inoffenſive Medicine, and agreeable to the Stomach, by extracting its Virtues in cold Water, was unknown to them. The Leaves, and tender Tops, of Pine and Fir are, in our Times, uſed for Diet-drinks, and allowed to be antiſcorbutic and diuretic. But the moſt elaborate Juice, Salt, and Spirit of thoſe Ever-greens, are to be found in Tar, whoſe Virtues extend not to Animals alone, but, alſo, to Vegetables. Mr. *Evelyn*, in his Treatiſe on Foreſt-trees, obſerves with Wonder, that Stems of Trees, ſmeared over with Tar, are preſerved thereby from being hurt by the invenom'd Teeth of Goats, and other Injuries, while every other thing of an unctuous Nature is highly prejudicial to them.

It ſeems that Tar and Turpentine may be had, more or leſs, from all Sorts of Pines and Firs whatſoever; and that the native Spirits, and eſſential Salts, of thoſe Vegetables are the ſame in Turpentine, and common Tar. In Effect, this vulgar Tar, which Cheapneſs and Plenty may have render'd contemptible, appears to be an excellent Balſam, containing the Virtues of moſt other Balſams, which it eaſily imparts to Water, and by that means readily and inoffenſively inſinuates them into the Habit of the Body.

The reſinous Exſudations of Pines and Firs are an important Branch of the Materia Medica, and not only uſeful in the Preſcriptions of Phyſicians, but have been, alſo, thought otherwiſe conducive to Health. *Pliny* tells us, that Wines, in the Time of the old *Romans*, were medicated with Pitch and Reſin; and *Johnſtonus*, in his *Dendrographia*, obſerves, that it is wholſome to walk in Groves of Pine-trees, which impregnate the Air with balſamic Particles. That all Turpentines and Reſins are good for the Lungs, againſt Gravel, alſo, and Obſtructions, is no Secret. And that the medicinal Properties of thoſe Drugs are found in Tar-water, without heating the Blood, or diſordering the Stomach, is confirmed by Experience; and, particularly, that phthiſical and aſthmatic Perſons receive ſpeedy and great Relief from the Uſe of it.

Balſams, as all unctuous and oily Medicines, create a Nauſeating in the Stomach. They cannot, therefore, be taken in Subſtance, ſo much, or ſo long, as to produce all thoſe ſalutary Effects, which, if throughly mixed with the Blood and Juices, they would be capable of producing. It muſt, therefore, be a thing of great Benefit to be able to introduce any requiſite Quantity of their volatile Parts into the fineſt Ducts and Capillary Veſſels, ſo as not to offend the Stomach; but, on the contrary, to comfort and ſtrengthen it in a great Degree.

According to *Pliny*, liquid Pitch, (as he calls it) or Tar, was obtained by ſetting Fire to Billets, or old fat Pines or Firs. The firſt Running was Tar, the latter, or thicker Running, was Pitch. *Theophraſtus* is more particular: He tells us, the *Macedonians* made huge Heaps of the cloven Trunks of thoſe Trees, wherein the Billets were placed erect beſide each other:

That

That ſuch Heaps or Piles of Wood were ſometimes a hundred and eighty Cubits round, and ſixty, or even an hundred, high; and that, having covered them with Sods of Earth, to prevent the Flame from burſting forth, (in which Caſe the Tar was loſt) they ſet on Fire thoſe huge Heaps of Pine or Fir, letting the Tar and Pitch run out in a Chanel.

From the manner of procuring Tar, it plainly appears to be a natural Production, lodged in the Veſſels of the Tree, whence it is only freed and let looſe (not made) by Burning. If we may believe *Pliny*, the firſt Running, or Tar, was called *Cedrium*, and was of ſuch Efficacy to preſerve from Putrefaction, that in *Egypt* they embalmed dead Bodies with it. And to this he aſcribes their Mummies continuing uncorrupted for ſo many Ages.

Some modern Writers inform us, that Tar flows from the Trunks of Pines and Firs, when they are very old; that Pitch is Tar inſpiſſated; and both are the Oil of the Tree grown thick and black with Age, and the Influence of the Sun. The Trees, like old Men, being unable to perſpire, and their ſecretory Ducts obſtructed, they are, as it were, choked and ſtuffed with their own Juice.

The Method uſed by our Colonies in *America*, for making Pitch and Tar, is, in Effect, the ſame with that of the antient *Macedonians*, as appears in the Account given in the Philoſophical Tranſactions. And the Relation of *Leo Africanus*, who deſcribes as an Eye-witneſs, the making of Tar on Mount *Atlas*, agrees, in Subſtance, with the Methods uſed by the *Macedonians* of old, and the People of *New England* at this Day.

Tar, and all Sorts of Exſudations from Ever-greens, are, in a general Acceptation, included under the Name *Reſin*. Turpentine is a Reſin, and on all hands allowed to have great medicinal Virtues. Tar, and its Infuſion, contain theſe Virtues. Tar-water is extremely pectoral and reſtorative; and, if I may judge from what Experience I have had, it poſſeſſeth the moſt valuable Qualities aſcribed to the ſeveral Balſams of *Peru*, of *Tolu*, of *Capivi*, and even to the Balm of *Gilead*; ſuch is its Virtue in Aſthmas and Pleuriſies, in Obſtructions, and ulcerous Eroſions, of the inward Parts.

The Folly of Man rateth things by their Scarceneſs, but Providence has made the moſt uſeful things moſt common. Among liquid oily Subſtances, which are termed *Balſams*, and valued for medicinal Virtues, Tar may hold its Place as a moſt valuable Balſam. Its Fragrancy ſhews, that it is poſſeſſed of active Qualities; and its Oilineſs, that it is fitted to retain them. This excellent Balſam may be purchaſed for a Penny a Pound, whereas the Balſam of *Judea*, when moſt plenty, was ſold, on the very Spot that produced it, for double its Weight in Silver, if we may credit *Pliny*. Now, comparing the Virtues I have experienced in Tar, with thoſe I find aſcribed to the precious Balm of *Judea*, of *Gilead*, or of *Mecha*, (as it is diverſly called) I am of Opinion, that the latter is not a Medicine of more Value or Efficacy than the former.

The medicinal Virtues of Amber are to be found in the balſamic Juices of Pines and Firs. Particularly the Virtues of the moſt valuable Preparation, I mean Salt of Amber, are in a great Degree anſwered by Tar-water, as a Detergent, Diaphoretic, and Diuretic.

It is remarked both by *Theophraſtus* and *Johnſtonus*, that Trees growing in low and ſhady Places, do not yield ſo good Tar, as thoſe which grow in higher and more expoſed Situations. And *Theophraſtus* further obſerves, that the Inhabitants of Mount *Ida* in *Aſia*, who diſtinguiſh the *Idæan* Pine from the Maritime, affirm, that the Tar flowing from the former is in greater Plenty, as well as more fragrant, than the other. Hence it ſhould ſeem, the Pines and Firs in the Mountains of *Scotland* might be employed in that way, and rendered valuable; even where the Timber, by its Remoteneſs from Water-carriage, is of ſmall Value. What we call *Scotch Fir*, is falſly ſo called, being, in Truth, a wild Foreſt-pine; and, as Mr. *Ray* informs us, agreeing much with the Deſcription of a Pine growing on Mount *Olympus* in *Phrygia*, probably the only Place where it is found out of theſe Iſlands; in which, of late Years, it is ſo much planted and cultivated with ſo little Advantage, while the Cedar of *Lebanon* might, perhaps, be raiſed with little more Trouble, and much more Profit and Ornament.

At preſent the *Norwegian* Tar is the moſt liquid, and beſt for medicinal Uſes, of any I have experienced. Thoſe Trees that grow on Mountains expoſed to the Sun, or the North Wind, are reckoned by *Theophraſtus*, to produce the beſt and pureſt Tar: And the *Idæan* Pines were diſtinguiſhed from thoſe growing on the Plain, as yielding a thinner, ſweeter, and better ſcented Tar; all which Differences, I think, I have obſerved between the Tar that comes from *Norway*, and that which comes from low and ſwampy Countries.

The leſs Violence is uſed to Nature, the better its Produce. The Juice of Olives and Grapes, iſſuing by the lighteſt Preſſure, is beſt. Reſins, that drop from the Branches ſpontaneouſly, or ouſe from the Trees upon the ſlighteſt Inciſion, are the fineſt, and moſt fragrant. And Infuſions are obſerved to act more ſtrongly than Decoctions of Plants; the more ſubtile and volatile Salts and Spirits, which might be loſt or corrupted by the latter, being obtained in their natural State by the former. It is, alſo, obſerved, that the fineſt, pureſt, and moſt volatile Part is that which firſt aſcends in Diſtillation. And, indeed, it ſhould ſeem the lighteſt and moſt active Particles required leaſt Force to diſengage them from the Subject.

The Salts, therefore, and more active Spirits, of the Tar are got by Infuſion in cold Water; but the reſinous Part is not to be diſſolved thereby. Hence the Prejudice, which ſome, perhaps, may entertain againſt Tar-water, as a Medicine, the Uſe whereof might inflame the Blood by its Sulphur and Reſin, appears not well grounded; it being, indeed, impregnated with a fine acid Spirit, which is balſamic, diuretic, and poſſeſſed of many other Virtues. Spirits are ſuppoſed to conſiſt of Salts and Phlegm, and probably too ſomewhat of a fine oily Nature, differing *from Oil, becauſe it mixeth with Water*; and agreeing with Oil in this, that it runneth in Rivulets by Diſtillation. Thus much is allowed, that the Water, Earth, and fixed Salt, are the ſame in all Plants: That, therefore, which differenceth a Plant, or makes it what it is, the native Spark, or Form, in the Language of Chymiſts and Schools, is none of theſe things; nor yet the fineſt Oil, which ſeemeth only its Receptacle or Vehicle. It is obſerved by Chymiſts, that all Sorts of balſamic Wood afford an acid Spirit, which is the volatile oily Salt of the Vegetable. Herein are chiefly contained their medicinal Virtues, and by the Trials I have made it appear, that the acid Spirit in Tar-water poſſeſſeth the Virtues, in an eminent Degree, of that of Guaiacum, and other medicinal Woods.

Qualities, in a Degree too ſtrong for human Nature to ſubdue and aſſimilate to itſelf, muſt hurt the Conſtitution. All Acids, therefore, may not be uſeful or innocent. But this ſeems an Acid ſo throughly concocted, ſo gentle, mild, temperate, and withal poſſeſſed of a Spirit ſo fine and volatile, as readily to enter the ſmalleſt Veſſels, and be aſſimilated with the utmoſt Eaſe.

If any one were minded to diſſolve ſome of the Reſin, together with the Salt or Spirit, he need only mix ſome Spirit of Wine with the Water. But ſuch an entire Solution of Reſins and Gums as to qualify them for entering and pervading the Animal Syſtem, like the fine acid Spirit that firſt flies off from the Subject, is, perhaps, impoſſible to be obtained. It is an Apophthegm of the Chymiſts, derived from *Helmont*, that whoever can make Myrrh ſoluble by the Action and Powers of the human Body, has the Secret of prolonging Life; and *Boerhaave* owns, that there ſeems to be Truth in this, from its reſiſting Putrefaction. Now this Quality is as remarkable in Tar, with which the Antients embalmed and preſerved dead Bodies. And tho' *Boerhaave* himſelf, and other Chymiſts before him, have given Methods for making Solutions of Myrrh, yet it is by means of Alcohol, which extracts only the inflammable Parts. And it does not ſeem, that any Solution of Myrrh is impregnated with its Salt, or acid Spirit. It may not, therefore, ſeem ſtrange, if this Water ſhould be found more beneficial for procuring Health and long Life, than any Solution of Myrrh whatſoever.

Certainly divers Reſins and Gums may have Virtues, and yet not be able for their Groſſneſs to paſs the Lacteals, and other finer Veſſels, nor yet, perhaps, readily impart thoſe Virtues to a Menſtruum, that may with Safety and Speed convey them throughout the human Body: Upon all which Accounts, I believe Tar-water will be found to have ſingular Advantages. It is obſerved, that acid Spirits prove the ſtronger, by how much the greater Degree of Heat is required to raiſe them. And, indeed, there ſeems to be no Acid more gentle than this, obtained by the ſimple Affuſion of cold Water, which carries off from the Subject the moſt light and ſubtile Parts, and, if one may ſo ſpeak, the very Flower of its ſpecific Qualities. And here it is to be noted, that the volatile Salt and Spirit of Vegetables, by gently ſtimulating the Solids, attenuate the Fluids contained in them, and promote Secretions, and that they are penetrating and active, contrary to the general Nature of other Acids.

It is a great Maxim for the Preſervation of Health, that the Juices of the Body be kept fluid in a due Proportion. Therefore the acid volatile Spirit in Tar-water, at once attenuating and cooling in a moderate Degree, muſt greatly conduce to Health, as a mild ſalutary Deobſtruent, quickening the Circulation of the Fluids without injuring the Solids, thereby gently removing or preventing thoſe Obſtructions, which are the great and general Cauſe of moſt chronical Diſeaſes, and in this manner anſwering to antihyſteric Medicines, ſuch as Aſa-fœtida, Galbanum, Myrrh, Amber, and, in general, to all the Reſins and Gums of Trees or Shrubs uſeful in nervous Caſes.

Warm Water is itſelf a Deobſtruent: Therefore the Infuſion of Tar, drank warm, is eaſier inſinuated into all the nice Capillary Veſſels, and acts not only by virtue of the Balſam, but, alſo,

alſo, by that of the Vehicle. Its Taſte, its diuretic Quality, its being ſo great a Cordial, ſhew the Activity of this Medicine. And, at the ſame time that it quickens the ſluggiſh Blood of the Hyſterical, its balſamic oily Nature abates the too rapid Motion of the ſharp thin Blood in thoſe who are Hectic. There is a Lentor and Smoothneſs in the Blood of healthy ſtrong People; on the contrary, there is often an Acrimony and Solution in that of weakly Perſons. The fine Particles of Tar are not only warm and active; they are, alſo, balſamic and emollient, ſoftening and enriching the ſharp and vapid Blood, and healing the Eroſions occaſioned thereby in the Blood-veſſels and Glands.

Tar-water poſſeſſes the ſtomachic and cardiac Qualities of Elixir Proprietatis, *Stoughton*'s Drops, and many ſuch Tinctures and Extracts; with this Difference, that it worketh its Effect more ſafely, as it hath nothing of that Spirit of Wine, which, however mixed and diſguiſed, may yet be well accounted a Poiſon in ſome Degree.

Such Medicines are ſuppoſed to be diaphoretic, which, being of an active and ſubtile Nature, paſs through the whole Syſtem, and work their Effect in the fineſt Capillaries, and perſpiratory Ducts, which they gently cleanſe and open. Tar-water is extremely well fitted to work by ſuch an inſenſible Diaphoreſis, by the Fineneſs and Activity of its acid volatile Spirit. And ſurely thoſe Parts ought to be very fine, which can ſcour the perſpiratory Ducts, under the Scarf-ſkin, or Cuticle, if it be true, that one Grain of Sand would cover the Mouths of more than an hundred thouſand.

Another way wherein Tar-water operates, is by Urine, than which, perhaps, no Method is more ſafe and effectual for cleanſing and carrying off the Salts of the Blood. But it ſeems to produce its principal Effect as an Alterative, which is ſure, eaſy, and much ſafer than thoſe vehement purgative, emetic, and ſalivating Medicines, which do Violence to Nature.

An Obſtruction of ſome Veſſels cauſeth the Blood to move more ſwiftly in other Veſſels which are not obſtructed. Hence ariſe manifold Diſorders. A Liquor that dilutes and attenuates, reſolves thoſe Concretions which obſtruct the Veſſels. Tar-water is ſuch a Liquor. It may be ſaid indeed of common Water, that it attenuates; alſo, of Mercurial Preparations, that they attenuate. But it ſhould be conſider'd, that mere Water only diſtends the Veſſels, and thereby weakens their Tone; and that Mercury, by its great Momentum, may juſtly be ſuſpected of hurting the fine Capillaries; which two Deobſtruents, therefore, might eaſily over-act their Parts, and (by leſſening the Force of the elaſtic Veſſels) remotely produce thoſe Concretions they are intended to remove.

Weak and rigid Fibres are looked on by the moſt able Phyſicians, as Sources of two different Claſſes of Diſtempers; a ſluggiſh Motion of the Liquids occaſions weak Fibres, therefore, Tar-water is good to ſtrengthen them, as it gently accelerates the Motion of their Contents. On the other hand, being an unctuous bland Fluid, it moiſtens and ſoftens the dry and ſtiff Fibres; and ſo proves a Remedy for both Extremes.

Common Soaps are Compoſitions of lixivial Salt and Oil. The corroſive Acrimony of the ſaline Particles being ſoftened by the Mixture of an unctuous Subſtance, they inſinuate themſelves into the ſmall Ducts with leſs Difficulty and Danger. The Combination of theſe different Subſtances makes up a very ſubtile and active Medicine, fitted for mixing with all Humours, and reſolving all Obſtructions. Soap, therefore, is juſtly eſteemed a moſt efficacious Medicine in many Diſtempers.

Alcaline Salt is allowed to be cleanſing, attenuating, opening, reſolving, ſweetening; it is pectoral, vulnerary, diuretic, and hath other good Qualities, which are, alſo, to be found in Tar-water. It is granted, that Oil, and acid Salts, combined together, exiſt in Vegetables; and that, conſequently, there are acid Soaps as well as alcaline. And the ſaponaceous Nature of the acid vegetable Spirits is what renders them ſo diuretic, ſudorific, penetrating, abſterſive, and reſolving. Such, for Inſtance, is the acid Spirit of Guaiacum. All theſe Virtues ſeem to be in Tar-water in a mild and ſalutary Degree.

It is the general Opinion, that all Acids coagulate the Blood. *Boerhaave* excepts Vinegar, which he holds to be a Soap, inaſmuch as it is found to contain an Oil as well as an acid Spirit. Hence it is both unctuous and penetrating, a powerful Antiphlogiſtic, and Preſervative againſt Corruption and Infection. Now, it ſeems evident, that Tar-water is a Soap as well as Vinegar. For though it be the Characteriſtic of Reſin, which is an inſpiſſated groſs Oil, not to diſſolve in Water, yet the Salts attract ſome fine Particles of eſſential Oil; which fine Oil ſerves as a Vehicle for the acid Salts, and ſhews itſelf in the Colour of the Tar-water; for all pure Salts are colourleſs. And though the Reſin will not diſſolve in Water, yet the ſubtile Oil, in which the vegetable Salts are lodged, may as well mix with Water as Vinegar does, which contains both Oil and Salt. And as the Oil in Tar-water diſcovers itſelf to the Eye, ſo the acid Salts manifeſt themſelves to the Taſte. Tar-water, therefore, is a Soap, and as ſuch, has the medicinal Qualities of Soaps.

It operates more gently, as the acid Salts loſe their Acrimony, being ſheathed in Oil, and thereby approaching the Nature of neutral Salts, and are more benign and friendly to the Animal Syſtem; and more effectually, as by the Help of a volatile, ſmooth, inſinuating Oil, thoſe ſame Salts are more eaſily introduced into the Capillary Ducts. Therefore, in Fevers, and epidemical Diſtempers, it is, (and I have found it ſo) as well as in chronical Diſeaſes, a moſt ſafe and efficacious Medicine, being good againſt too great Fluidity as a Balſamic, and good againſt Viſcidity as a Soap. There is ſomething in the fiery corroſive Nature of lixivial Salts, which makes alcaline Soap a dangerous Remedy in all Caſes where an Inflammation is apprehended. And as Inflammations are often occaſioned by Obſtructions, it ſhould ſeem, an acid Soap was much the ſafer Deobſtruent.

Even the beſt Turpentines, however famous for their vulnerary and detergent Qualities, have yet been obſerved, by their Warmth, to diſpoſe to inflammatory Tumors. But the acid Spirit, being in ſo great Proportion in Tar-water, renders it a cooler and ſafer Medicine. And the ethereal Oil of Turpentine, though an admirable Drier, Healer, and Anodyne, when outwardly applied to Wounds and Ulcers, and not leſs uſeful in cleanſing the urinary Paſſages, and healing their Ulcerations, yet is known to be of a Nature ſo very relaxing, as ſometimes to do much Miſchief. Tar-water is not attended with the ſame ill Effects, which I believe are owing, in a great meaſure, to the ethereal Oil's being deprived of the acid Spirit in Diſtillation, which, vellicating and contracting as a Stimulus, might have proved a Counterpoiſe to the exceſſive lubricating and relaxing Qualities of the Oil.

Woods in Decoctions do not ſeem to yield ſo ripe and elaborate a Juice, as that which is depoſited in the Cells, or Loculi Terebinthiaci, and ſpontaneouſly ouſes from them. And, indeed, though the Balſam of *Peru*, obtained by boiling the proper Wood, and ſcumming the Decoction, be a very valuable Medicine, and of great account in divers Caſes, particularly Aſthmas, nephritic Pains, nervous Colics, and Obſtructions, yet I verily think, (and I do not ſay this without Experience) that Tar-water is a more efficacious Remedy in all thoſe Caſes, than even that coſtly Drug.

It has been already obſerved, that the reſtorative, pectoral, and antihyſterical Virtues of the moſt precious Balſams and Gums are poſſeſſed in an high Degree by Tar-water. And I do not know any Purpoſe anſwered by the Wood-drinks, for which Tar-water may not be uſed, with at leaſt, equal Succeſs. It contains the Virtues even of Guaiacum, which ſeems the moſt efficacious of all the Woods, warming and ſweetening the Humours, and being diaphoretic, and uſeful in Gouts, Dropſies, and Rheums, as well as in the Foul Diſeaſe. Nor ſhould it ſeem ſtrange, if the Virtues obtained by boiling an old dry Wood, prove inferior to thoſe extracted from a Balſam.

There is a fine volatile Spirit in the Waters of *Geronſter*, the moſt eſteemed of all the Fountains about *Spa*, but whoſe Waters do not bear tranſporting. The ſtomachic, cardiac, and diuretic Qualities, of this Fountain ſomewhat reſemble thoſe of Tar-water, which, if I am not greatly miſtaken, contains the Virtues of the beſt chalybeate and ſulphureous Waters; with this Difference, that thoſe Waters are liable to affect the Head in taking, which Tar-water is not. Beſides, there is a Regimen of Diet to be obſerved, eſpecially with chalybeate Waters, which I never found neceſſary with this. Tar-water layeth under no Reſtraint either as to Diet, Hours, or Employment. A Man may ſtudy, uſe Exerciſe, or repoſe, keep his own Hours, paſs his Time either within or without, and take wholſome Nouriſhment of any Kind.

The Uſe of chalybeate Waters, however excellent for the Nerves and Stomach, is often ſuſpended by Colds, and inflammatory Diſorders, in which they are acknowledged to be very dangerous; whereas Tar-water is ſo far from hurting in thoſe Caſes, or deſerving to be diſcontinued on that Account, that it greatly contributes to their Cure.

Cordials, vulgarly ſo called, act immediately on the Stomach, and, by a Conſent of the Nerves, on the Head. But Medicines, of an Operation too fine and light to produce a ſenſible Effect in the *Primæ Viæ*, may, nevertheleſs, in their Paſſage through the Capillaries, operate on the Sides of thoſe ſmall Veſſels, in ſuch a manner as to quicken their Oſcillations, and conſequently the Motion of their Contents, producing, in Effect, all the Benefits of a Cordial much more laſting and ſalutary than thoſe of fermented Spirits, which, by their cauſtic and coagulating Qualities, do incomparably more Miſchief than Good. Such a cardiac Medicine is Tar-water. The tranſient Fits of Mirth, produced from fermented Liquors, are attended with proportionable Depreſſions of Spirit in their Intervals. But the

the calm Chearfulneſs ariſing from this Water of Health (as it may juſtly be called) is permanent. Tar-water is ſo far from hurting the Nerves, as common Cordials do, that it is highly uſeful in Cramps, Spaſms of the Viſcera, and paralytic Numbneſs.

Emetics are on certain Occaſions adminiſtered with great Succeſs. But the over-ſtraining and weakening of Nature may be very juſtly apprehended from a Courſe of Emetics. They are, nevertheleſs, preſcribed and ſubſtituted for Exerciſe. But, in *Plato*'s *Timæus*, Vomits and Purges are ſaid to be the worſt Exerciſe in the World. There is ſomething in the mild Operation of Tar-water, that ſeems more friendly to the Œconomy, and forwards the Digeſtions and Secretions in a way more natural and benign, the Mildneſs of this Medicine being ſuch, that I have known Children take it for above ſix Months together, with great Benefit, and without any Inconvenience; and, after long and repeated Experience, I eſteem it a moſt excellent Diet-drink, fitted to all Seaſons and Ages.

It is, I think, allowed, that the Origin of the Gout lies in a faulty Digeſtion. And it is remarked by the ableſt Phyſicians, that the Gout is ſo difficult to be cur'd, becauſe heating Medicines aggravate its immediate, and cooling its remote Cauſe. But Tar-water, although it contain active Principles, that ſtrengthen the Digeſtion beyond any thing I know, and, conſequently, muſt be highly uſeful, either to prevent or leſſen the following Fit, or by invigorating the Blood, to caſt it upon the Extremities, yet it is not of ſo heating a Nature as to do harm even in the Fit. Nothing is more difficult or diſagreeable to Men, than to argue them out of their Prejudices: I ſhall not, therefore, enter into Controverſies on this Subject; but, if them diſpute and object, ſhall leave the Deciſion to Time and Trial. In the modern Practice, Soap, Opium, and Mercury, bid faireſt for univerſal Medicines. The firſt of theſe is highly ſpoken of. But then thoſe who magnify it moſt, except againſt the Uſe of it in ſuch Caſes where the Obſtruction is attended with a putrefactive Alcali, or where an inflammatory Diſpoſition appears. It is acknowledged to be very dangerous in a Phthiſis, Fever, and ſome other Caſes, in which Tar-water is not only ſafe, but *uſeful*.

Opium, tho' a Medicine of great Extent and Efficacy, yet is frequently known to produce grievous Diſorders in hyſterical or hypochondriacal Perſons, who make a great Part, perhaps the greateſt, of thoſe who lead ſedentary Lives in theſe Iſlands. Beſides, upon all Conſtitutions dangerous Errors may be committed in the Uſe of Opium.

Mercury has, of late become a Medicine of very general Uſe; the extreme Minuteneſs, Mobility, and Momentum of its Parts, rendering it a powerful Cleanſer of all Obſtructions, even in the moſt minute Capillaries: But then we ſhould be cautious in the Uſe of it, if we conſider, that the very Thing which gives it Power of doing Good above other Deobſtruents, diſpoſes it, alſo, to do Miſchief; I mean its great Momentum: The Weight of it being about ten times that of Blood, and the Momentum being the joint Product of the Weight and Velocity, it muſt needs operate with great Force. And may it not be juſtly feared, that ſo great a Force, entering the minuteſt Veſſels, and breaking the obſtructing Matter, might alſo break or wound the fine render Coats of thoſe ſmall Veſſels, and ſo bring on the untimely Effects of old Age, producing more, perhaps, and worſe Obſtructions than thoſe it removed? Similar Conſequences may juſtly be apprehended from other mineral and ponderous Medicines: Therefore, upon the Whole, there will not perhaps be found any Medicine more general in its Uſe, or more ſalutary in its Effects, than Tar-water.

To ſuppoſe that all Diſtempers ariſing from very different, and, it may be, from contrary, Cauſes, can be cured by one and the ſame Medicine, muſt ſeem chimerical; but it may with Truth be affirmed, that the Virtue of Tar-water extends to a ſurpriſing Variety of Caſes very diſtant and unlike. This I have experienced in my Neighbours, my Family, and myſelf; and as I live in a remote Corner among poor Neighbours, who, for want of a regular Phyſician, have often recourſe to me, I have had frequent Opportunities of Trial, which convince me it is of ſo juſt a Temperament as to be an Enemy to all Extremes. I have known it do great good in a cold watry Conſtitution, as a Cardiac and Stomachic, and at the ſame time allay Heat, and feveriſh Thirſt, in another. I have known it correct coſtive Habits in ſome, and the contrary Habit in others: Nor will this ſeem incredible, if it be conſidered, that middle Qualities naturally reduce the extreme; warm Water, for Inſtance, mixed with hot and cold Waters, will leſſen the Heat in that, and the Cold in this.

They who know the great Virtues of common Soap, whoſe coarſe lixivial Salts are the Product of culinary Fire, will not think it incredible, that Virtues of mighty Force and Extent ſhould be found in a fine acid Soap, the Salts and Oil whereof are a moſt elaborate Product of Nature, and the ſolar Light.

It is certain Tar-water warms, and therefore ſome may perhaps ſtill think it cannot cool. The more effectually to remove this Prejudice, let it be farther conſidered, that, as, on the one hand, oppoſite Cauſes ſometimes produce the ſame Effects, for Inſtance, Heat by Rarefaction, and Cold by Condenſation, both increaſe the Air's Elaſticity; ſo, on the other hand, the ſame Cauſe ſhall ſometimes produce oppoſite Effects: Heat, for Inſtance, in one Degree thins, in another coagulates the Blood: It is not therefore ſtrange; that Tar-water ſhould warm one Habit, and cool another; have one good Effect on a cold Conſtitution, and another good Effect upon an inflamed one; nor, if this be ſo, that it ſhould cure oppoſite Diſorders; all which juſtifies to Reaſon, what I have often found true in Fact. The Salts, the Spirits, and the Heat, of Tar-water are of a Temperature congenial to the Conſtitution of Man, which receives from it a kindly Warmth, but no inflaming Heat. It was remarkable, that two Children in my Neighbourhood, being in a Courſe of Tar-water, upon an Intermiſſion of it, never failed to have their Iſſues inflamed by an Humour much more hot and ſharp than at other times. But its great Uſe in the Small-pox, Pleuriſies, and Fevers, is a ſufficient Proof, that Tar-water is not of an inflaming Nature.

I have dwelt the longer on this Head, becauſe ſome Gentlemen of the Faculty have thought fit to declare, that Tar-water muſt inflame; and that they would never viſit any Patient in a Fever, who had been a Drinker of it: But I will venture to affirm, that it is ſo far from increaſing a feveriſh Inflammation, that it is, on the contrary, a moſt ready Means to allay and extinguiſh it. It is of admirable Uſe in Fevers, being at the ſame time the ſureſt, ſafeſt, and moſt effectual, Paregoric and Cordial; for the Truth of which I appeal to any Perſon's Experience, who ſhall take a large Draught of it Milk-warm in the Paroxyſm of a Fever, even when plain Water or Herb Teas ſhall be found to have little or no Effect. To me it ſeems, that its ſingular and ſurpriſing Uſe in Fevers of all Kinds, were there nothing elſe, would be alone ſufficient to recommend it to the Public.

The beſt Phyſicians make the Idea of a Fever to conſiſt in a too great Velocity of the Heart's Motion, and too great Reſiſtance at the Capillaries. Tar-water, as it ſoftens and gently ſtimulates thoſe nice Veſſels, helps to propel their Contents, and ſo contributes to remove the latter Part of the Diſorder; and, for the former, the irritating Acrimony, which accelerates the Motion of the Heart, is diluted by watry, corrected by acid, and ſoftened by balſamic Remedies; all which Intentions are anſwered by this aqueous, acid, balſamic Medicine. Beſides, the viſcid Juices coagulated by the febrile Heat, are reſolved by Tar-water as a Soap, and not too far reſolved as it is a gentle acid Soap; to which we may add, that the peccant Humours and Salts are carried off by its diaphoretic and diuretic Qualities.

I found all this confirmed by my own Experience, in the late ſickly Seaſon of the Year one thouſand ſeven hundred and forty-one, having had twenty-five Fevers in my own Family cured by this medicinal Water, drank copiouſly. The ſame Method was practiſed on ſeveral of my poor Neighbours with equal Succeſs; it ſuddenly calmed the feveriſh Anxieties, and ſeemed by every Glaſs to refreſh, and infuſe Life and Spirit into the Patient. At firſt, ſome of thoſe Patients have been vomited; but afterwards I found that without Vomiting, Bleeding, Bliſtering, or any other Evacuation or Medicine whatſoever, very bad Fevers could be cured by the ſole drinking of Tar-water Milk-warm, and in proper Quantities, perhaps a large Glaſs every Hour taken in Bed; and it was remarkable, that ſuch as were cured by this comfortable Cordial, recovered Health and Spirits at once, whilſt thoſe who had been cured by Evacuations often languiſhed long, even after the Fever left them, before they could recover of their Medicines, and regain their Strength.

In Peripneumonies and Pleuriſies I have obſerved Tar-water to be excellent, having known ſome pleuritic Perſons cured without Bleeding, by a Bliſter early applied to the Stitch, and the copious Drinking of Tar-water, four or five Quarts, or even more, in four-and-twenty Hours; and I recommend it to farther Trial, whether, in all Caſes of a Pleuriſy, one moderate Bleeding, a Bliſter on the Part affected, and Plenty of tepid Tar-water, may not ſuffice, without thoſe repeated and immoderate Bleedings, the bad Effects of which are perhaps never got over. I even ſuſpect, that a pleuritic Patient, betaking himſelf to Bed betimes, and drinking very copiouſly of Tar-water, may be cured by that alone, without Bleeding, Bliſtering, or any other Medicine whatever. Certainly I found this ſucceed by exhibiting a Glaſs every Half-hour.

I have known a Bloody-flux of long Continuance, after various Medicines had been tried in vain, cured by Tar-water; but that which I take to be the moſt ſpeedy and effectual Remedy in a Bloody-flux, is a Clyſter of an Ounce of common brown Reſin, diſſolved over a Fire in two Ounces of Oil, and added to a Pint of Broth; which not long ago I had frequent Occaſion of trying, when that Diſtemper was epidemical: Nor can I ſay, that any to whom I adviſed it, miſcarried. This Experiment I was led to make by the Opinion I had of Tar as a Balſamic; and Reſin is only Tar inſpiſſated.

Nothing that I know corroborates the Stomach ſo much as Tar-water: Whence it follows that it muſt be of ſingular Uſe to Perſons afflicted with the Gout. And from what I have obſerved in five or ſix Inſtances, I verily believe it the beſt and ſafeſt Medicine either to prevent the Gout, or ſo to ſtrengthen Nature againſt the Fit,

Fit, as to drive it from the Vitals. Doctor *Sydenham*, in his Treatiſe of the Gout, declares, that whoever finds a Medicine the moſt efficacious for ſtrengthening Digeſtion, will do more Service in the Cure of that and other chronical Diſtempers, than he can even form a Notion of; and I leave it to Trial, whether Tar-water be not that Medicine, as I myſelf am perſuaded it is, by all the Experiments I could make. But in all Trials I would recommend Diſcretion; for Inſtance, a Man with the Gout in his Stomach ought not to drink cold Tar-water.

It is evident to Senſe, that Blood, Urine, and other animal Juices, being let to ſtand, ſoon contract a great Acrimony. Juices, therefore, from a bad Digeſtion, retained and ſtagnating in the Body, grow ſharp and putrid; hence, a fermenting Heat, the immediate Cauſe of the Gout: The curing this by cooling Medicines, as they would increaſe the antecedent Cauſe, muſt be a vain Attempt. On the other hand, Spices and ſpirituous Liquors, while they continue to remove the antecedent Cauſe, or bad Digeſtion, would, by inflaming the Blood, increaſe the proximate or immediate Cauſe of the Gout, the fermenting Heat: The Scope therefore, muſt be to find a Medicine that ſhall corroborate, but not inflame. *Bitter Herbs* are recommended; but they are *weak* in Compariſon of Tar-water.

The great Force of Tar-water to correct the Acrimony of the Blood, appears in nothing more than in the Cure of a Gangrene, from an internal Cauſe; which was performed on a Servant of my own, by preſcribing the copious and conſtant Uſe of Tar-water for a few Weeks. From my repreſenting Tar-water as good for ſo many Things, ſome perhaps may conclude it is good for Nothing; but Charity obliges me to ſay what I know, and what I think howſoever it may be taken; Men may cenſure and object as they pleaſe, but I appeal to Time and Experiment. Effects miſimputed, Cales wrong told, Circumſtances overlooked, perhaps, too, Prejudices and Partialities againſt Truth, may for a time prevail, and keep her at the Bottom of her Well; from whence, nevertheleſs, ſhe emergeth ſooner or later, and ſtrikes the Eyes of all who do not keep them ſhut.

Boerhaave thinks a Specific may be found for that peculiar Venom which infects the Blood in the Small-pox, and that the Proſpect of ſo great a public Benefit ſhould ſtir up Men to ſearch for it. Its wonderful Succeſs in preventing and mitigating that Diſtemper, would incline one to ſuſpect, that Tar-water is ſuch a Specific. Some think an Eryſipelas and the Plague differ only in Degree: If ſo, Tar-water ſhould be uſeful in the Plague; for I have known it cure an Eryſipelas.

Tar-water, as cleanſing, healing, and balſamic, is good in all Diſorders of the Urinary Paſſages, whether obſtructed or ulcerated. Doctor *Liſter* ſuppoſes, indeed, that Turpentines act by a cauſtic Quality, which irritates the Coats of the Urinary Ducts to expel Sand or Gravel. But, it ſhould ſeem, this expelling diuretic Virtue conſiſted rather in Salts than the Reſin, and conſequently reſides in the Tar-water gently ſtimulating by its Salts, without the dangerous Force of a Cauſtic. The violent Operation of Ipecacuanha lies in its Reſin, but the ſaline Extract is a gentle Purge and Diuretic, by the Stimulus of its Salts.

That which acts as a mild Cordial, neither hurting the Capillary Veſſels as a Cauſtic, nor affecting the Nerves, nor coagulating the Juices, muſt in all Caſes be a Friend to Nature, and aſſiſt the *Vis Vitæ* in its Struggle againſt all Kinds of Contagion; and, from what I have obſerved, Tar-water appears to me an uſeful Preſervative in all epidemical Diſorders, and againſt all other Infection whatſoever, as well as that of the Small-pox. What Effects the Paſſions of the Mind, have in human Maladies, is well known; and conſequently the general Benefit of ſuch a Cardiac cannot be doubted.

As the Body is ſaid to clothe the Soul, ſo the Nerves may be ſaid to conſtitute her inner Garment. And as the Soul animates the Whole, what nearly touches the Soul relates to all: Therefore the Aſperity of tartarous Salt, and the fiery Acrimony of alcaline Salts, irritating and wounding the Nerves, produce Paſſions and Anxieties in the Soul, which both aggravate Diſtempers, and render Mens Lives reſtleſs and wretched, even when they are afflicted with no apparent Diſtemper. This is the latent Spring of much Woe, Spleen, and Uneaſineſs of Life. Small imperceptible Irritations of the minuteſt Fibres or Filaments, cauſed by the pungent Salts of Wines and Sauces, ſo ſhake and diſturb the Microcoſms of high Livers, as often to raiſe Tempeſts in Courts and Senates; whereas the gentle Vibrations, that are raiſed in the Nerves, by a fine ſubtle Acid, ſheathed in a ſmooth volatile Oil, ſoftly ſtimulating and bracing the nervous Veſſels and Fibres, promotes a due Circulation and Secretion of the animal Juices, and creates a calm, ſatisfied Senſe of Health; and accordingly I have often known Tar-water procure Sleep, and compoſe the Spirits, in cruel Watchings, occaſioned either by Sickneſs, or by too intenſe Application of Mind.

In Diſeaſes ſometimes Accidents happen from without by Miſmanagement, ſometimes latent Cauſes operate within, jointly with the ſpecific Taint, or peculiar Cauſe of the Malady. The Cauſes of Diſtempers are often complicated, and there may be ſomething in the Idioſyncraſy of the Patient that puzzles the Phyſician. It may, therefore, be preſumed, that no Medicine is infallible, not even

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in any one Diſorder: But as Tar-water poſſeſſes the Virtues of fortifying the Stomach, as well as purifying and invigorating the Blood, beyond any Medicine that I know, it may be preſumed of great and general Efficacy in all thoſe numerous Illneſſes, which take their Riſe from foul or vapid Blood, or from a bad Digeſtion. The Animal Spirits are elaborated from the Blood: Such, therefore, as the Blood is, ſuch will be the Animal Spirits; more or leſs, weaker or ſtronger. This ſhews the Uſefulneſs of Tar-water in all hyſteric and hypochondriac Caſes; which, together with the Maladies from Indigeſtion, compriſe almoſt the whole Tribe of chronical Diſeaſes.

The Scurvy may be reckoned in theſe Climates an univerſal Malady, as People in general are ſubject to it, and as it mixes, more or leſs in almoſt all Diſeaſes. A Cachexy, or ill-Habit, is much of the ſame Kind with the Scurvy, proceeds from the ſame Cauſes, and is attended with the like Symptoms, which are ſo manifold and various, that the Scurvy may well be looked upon as a general Cachexy, infecting the whole Habit, and vitiating all the Digeſtions.

The Cure of the Scurvy is no more to be attempted by ſtrong active Medicines, than Pitch on Silk is to be removed by Force. The viſcid Humour muſt be gently reſolved and diluted, the Tone of the Veſſels recovered by a moderate Stimulation, and the tender Fibres, and Capillary Veſſels, gradually cleared from the concreted Stuff that adheres to and obſtructs them; all which is in the propereſt manner performed by a watry Diluent containing a fine vegetable Soap. And altho' a complete Cure by Alteratives, operating on the ſmall Capillaries, and by inſenſible Diſcharges, muſt require Length of Time; yet the good Effect of this Medicine on cachectic and ſcorbutic Perſons is ſoon perceived by the Change it produces in their pale diſcoloured Looks, giving a florid healthy Countenance in leſs Time than, perhaps, any other Medicine.

It is well known how extremely difficult it is to cure an inveterate Scurvy; how many ſcorbutic Patients have grown worſe by an injudicious Courſe of Evacuations; and how difficult, tedious and uncertain the Cure is, in the Hands even of the beſt, who are obliged to uſe ſuch Variety and Change of Medicines, in the different Stages of that Malady; which, nevertheleſs, may be cured (if I may judge by what I have experienced) by the ſole, regular, conſtant, and copious Uſe of Tar-water.

Tar-water moderately inſpiſſates with its balſamic Virtue, and renders mild the thin and ſharp Part of the Blood; the ſame Water, as a ſoapy Medicine, diſſolves the grumous Concretions of the fibrous Part. As a Balſam, it deſtroys the ulcerous Acrimony of the Humours; and, as a Deobſtruent, it opens and cleans the Veſſels, reſtores their Tone, and ſtrengthens the Digeſtion, whoſe Defects are the principal Cauſe of a Scurvy and Cachexy.

In the Cure of the Scurvy, the principal Aim is to ſubdue the Acrimony of the Blood and Juices. But as this Acrimony proceeds from different Cauſes, or even oppoſite, as acid and alcaline, what is good in one Sort of Scurvy proves dangerous, or even mortal, in another. If I may truſt what Trials I have been able to make, this Water is good in the ſeveral Kinds of Scurvy, acid, alcaline, and muriatic; and I believe the only Medicine that cures them all without doing Hurt in any. As it contains a volatile Acid with a fine volatile Oil, why may not a Medicine cool in one Part, and warm in another, be a Remedy to either Extreme? I have obſerved it to produce a kindly genial Warmth without Heat, a Thing to be aimed at in all Sorts of Scurvy. Beſides, the Balſam in Tar-water ſheaths all ſcorbutic Salts alike; and its great Virtues, as a Digeſter and Deobſtruent, are of general Uſe in all ſcorbutic, and, I may add, in all chronical Caſes whatſoever.

I cannot be ſure, that I have tried it in a ſcrophulous Caſe, tho' I have tried it ſucceſsfully in one that I ſuſpected to be ſo. And I apprehend it would be very ſerviceable in ſuch Diſorders. For altho' Doctor *Gibbs*, in his Treatiſe of the *King's Evil*, derives that Diſeaſe from a coagulating Acid, which is, alſo, agreeable to the Opinion of ſome other Phyſicians, and altho' Tar-water contain an Acid, yet, as it is a Soap, it reſolves inſtead of coagulating the Juices of the Body.

For hyſterical and hypochondriacal Diſorders, ſo frequent among us, it is commonly ſuppoſed, that all Acids are bad. But I will venture to except the acid Soap of Tar-water, having found, by my own Experience, and that of many others, that it raiſes the Spirits, and is an excellent Antihyſteric, nor leſs innocent than powerful; which cannot be ſaid of thoſe others in common Uſe, that often leave People worſe than they found them.

Many hyſteric and ſcorbutic Ailments, many Taints contracted by themſelves, or inherited from their Anceſtors, afflict the People of Condition in theſe Iſlands; which Ailments might be ſafely removed, or relieved, by the ſole Uſe of Tar-water.

As the Nerves are the Inſtruments of Senſation, it follows, that Spaſms in the Nerves may produce all Symptoms; and, therefore, a Diſorder in the nervous Syſtem ſhall imitate all Diſtempers, and occaſion, in Appearance, an Aſthma, for Inſtance, a Pleuriſy, or a Fit of the Stone. Now, whatever is good for the Nerves in general, is good againſt all ſuch Symptoms. But Tar-water, as it includes, in an eminent Degree, the Virtues of warm Gums and Reſins, is of great Uſe for comforting and ſtrengthening the Nerves, curing Twitches in the nervous Fibres, Cramps,

alſo, and Numbneſs of the Limbs, removing Anxieties, and promoting Sleep; in all which Caſes I have known it very ſucceſsful.

This ſafe and cheap Medicine ſuits all Circumſtances, and all Conſtitutions, operating eaſily, curing without diſturbing, raiſing the Spirits without depreſſing them; a Circumſtance that deſerves repeated Attention, eſpecially in theſe Climates, where ſtrong Liquors ſo fatally and ſo frequently produce thoſe very Diſtreſſes they are deſigned to remedy; and, if I am not miſinformed, even among the Ladies themſelves, who are truly much to be pitied. Their Condition of Life makes them a Prey to imaginary Woes, which never fail to grow up in Minds unexerciſed, and unemployed. To get rid of theſe, it is ſaid, there are ſome who betake themſelves to diſtilled Spirits. Thus are many Lives rendered wretched. But the tender Nerves, and low Spirits of ſuch poor Creatures, would be much relieved by the Uſe of Tar-water, which might prolong and chear their Lives.

I verily think, there is not any Medicine whatſoever, ſo effectual to reſtore a crazy Conſtitution, and chear a dreary Mind, or ſo likely to ſubvert the gloomy Empire of the Spleen.

It muſt be owned, that Tar-water is not ſo violent and ſudden a Medicine, as always to produce its Effect at once, (ſuch, by irritating, often do more Miſchief than Good) but a ſafe and mild Alterative, which penetrates the whole Syſtem, opens, heals, and ſtrengthens the remote Veſſels, alters and propels their Contents, and enters the minuteſt Capillaries, and cannot, therefore, otherwiſe, than by degrees, and in time, work a radical Cure in chronic Diſtempers. It gives, nevertheleſs, ſpeedy Relief in moſt Caſes; as I have found by myſelf, and many others. I have been ſurpriſed to ſee Perſons fallen away, and languiſhing under a bad Digeſtion, after a few Weeks, recover a good Stomach, and with it Fleſh and Strength, ſo as to ſeem renewed by the drinking of Tar-water. The Strength and Quantity of this Water to be taken by each individual Perſon, is beſt determined from Experience. And, as for the Time of taking, I never knew any Evil enſue from its being continued ever ſo long; but, on the contrary, many and great Advantages, which ſometimes would not, perhaps, begin to ſhew themſelves, till it had been taken two or three Months.

Sir *John Floyer* remarks, that we want a Method for the Uſe of Turpentine: And again, he who ſhall hit, ſays he, on the pleaſanteſt Method of giving Turpentine, will do great Cures in the Gout, Stone, Catarrhs, Dropſies, and cold Scurvies, Rheumatiſms, Ulcers, and Obſtructions of the Glands. Laſtly, he ſubjoins, that, for the Uſe of altering and amending the Juices and Fibres, it muſt be given frequently, and in ſuch ſmall Quantities at a time, and in ſo commodious a manner, as will agree beſt with the Stomach, ſtay longeſt in the Body, and not purge itſelf off; for large Doſes, ſays he, go thro' too quick, and, beſides, offend the Head. Now the Infuſion of Tar, or Turpentine, in cold Water, ſeems to ſupply the very Method that was wanted, as it leaves the more unctuous and groſs Parts behind, which might offend the Stomach, Inteſtines, and Head; and, as it may be eaſily taken, and as often, and in ſuch Quantity, and in ſuch Degree of Strength, as ſuits the Caſe of the Patient. Nor ſhould it ſeem, that the fine Spirit, and volatile Oil, obtained by Infuſion of Tar, is inferior to that of Turpentine, to which it ſuperadds the Virtue of Wood-ſoot, which is known to be very great, with reſpect to the Head and Nerves; and this appears evident from the manner of obtaining Tar. And as the fine volatile Parts of Tar, or Turpentine, are drawn off by Infuſion in cold Water, and eaſily convey'd throughout the whole Syſtem of the human Body; ſo, it ſhould ſeem, the ſame Method may be uſed with all Sorts of Balſams, or Reſins whatſoever, as the readieſt, eaſieſt, and moſt inoffenſive, as well as in many Caſes the moſt effectual Way of obtaining and imparting their Virtues.

After having ſaid ſo much of the Uſes of Tar, I muſt farther add, that, being rubbed on them, it is an excellent Preſervative of the Teeth and Gums; that it ſweetens the Breath, and that it clears and ſtrengthens the Voice. And as its Effects are various and uſeful, ſo there is nothing to be feared from the Operation of an Alterative ſo mild and friendly to Nature. It was a wiſe Maxim of certain antient Philoſophers, that Diſeaſes ought not to be irritated by Medicines. But no Medicine diſturbs the animal Oeconomy leſs than this; which, if I may truſt my own Experience, never produces any Diſorder in a Patient, when rightly taken.

I knew, indeed, a Perſon who took a large Glaſs of Tar-water juſt before Breakfaſt, which gave him an invincible Nauſea and Diſguſt, altho' he had before received the greateſt Benefit from it. But if Tar-water be taken and made in the manner preſcribed at the Beginning of this Eſſay, it will, if I miſtake not, have enough of the Salt to be uſeful, and little enough of the Oil to be inoffenſive. I mean my own Manner of making it, and not the *American*. Perſons more delicate than ordinary, may render it palatable, by mixing a Drop of the chymical Oil of Nutmegs, or a Spoonful of Mountain-wine, in each Glaſs. It may not be amiſs to obſerve, that I have known ſome, whoſe nice Stomachs could not bear it in the Morning, take it at Night, going to Bed, without any Inconvenience; and that, with ſome, it agrees beſt warm, with others cold. It may be made for brute Beaſts, as Horſes, in whoſe Diſorders I have found it very uſeful; I believe, more ſo, than that bituminous Subſtance, called *Barbados Tar*.

In very dangerous and acute Caſes, much may be taken, and often, as far as the Stomach can bear. But in chronical Caſes, about half a Pint, Night and Morning, may ſuffice; or if ſo large a Doſe ſhould prove diſagreeable, half the Quantity may be taken at four times, in the Morning, at Night going to Bed, and about two Hours after Dinner and Breakfaſt. A Medicine of ſo great Virtue in ſo many different Diſorders, and eſpecially in that grand Enemy, the Fever, muſt needs be a Benefit to Mankind in general. There are, nevertheleſs, three Sorts of People, to whom I would peculiarly recommend it; Sea-faring Perſons, Ladies, and Men of ſtudious and ſedentary Lives.

To Sailors, and all Sea-faring Perſons, who are ſubject to ſcorbutic Diſorders, and putrid Fevers, eſpecially in long *Southern* Voyages, I am perſuaded, this Tar-water would be very beneficial. And this may deſerve particular Notice in the preſent Courſe of marine Expeditions, when ſo many of our Countrymen have periſhed by ſuch Diſtempers contracted at Sea, and in foreign Climates; which, it is probable, might have been prevented, by the copious Uſe of Tar-water.

This Water will, alſo, give charitable Relief to the Ladies, who often want it more than the Pariſh-Poor; being many of them never able to make a good Meal, and ſitting pale, puny, and forbidden, like Ghoſts, at their own Table, Victims of Vapours and Indigeſtion.

Studious Perſons, alſo, pent up in narrow Holes, breathing bad Air, and ſtooping over their Books, are much to be pitied. As they are debarred the free Uſe of Air and Exerciſe, this I will venture to recommend as the beſt Succedaneum to both. My own ſedentary Courſe of Life had long ſince thrown me into an ill Habit, attended with many Ailments, particularly a nervous Colic, which rendered my Life a Burden, and the more ſo, becauſe my Pains were exaſperated by Exerciſe. But, ſince the Uſe of Tar-water, I find, tho' not a perfect Recovery from my old and rooted Illneſs, yet ſuch a gradual Return of Health and Eaſe, that I eſteem my having taken this Medicine, the greateſt of all temporal Bleſſings; and am convinced, that, under Providence, I owe my Life to it.

In the diſtilling of Turpentine, and other Balſams, by a gentle Heat, it has been obſerved, that there riſes, firſt, an acid Spirit that will mix with Water; which Spirit, except the Fire be very gentle, is loſt. This grateful acid Spirit that firſt comes over, is highly refrigeratory, diuretic, ſudorific, balſamic, or preſervative from Putrefaction, excellent in nephritic Caſes, and for quenching Thirſt; all which Virtues are contained in the cold Infuſion, which draws forth from Tar only its fine Flower or Quinteſſence, if I may ſo ſay, or the native vegetable Spirit, together with a little volatile Oil. *Siris*.

PLACENTA. A Cake. In Anatomy, *Placenta* is a Congeries of Blood-veſſels, adhering to the Uterus, during Geſtation, which, together with the Membranes, and *Funis Umbilicalis*, is excluded generally after the Fœtus. See SECUNDINÆ.

PLACENTULA. A Diminutive of the preceding Word.

PLACIANUM COLLYRIUM. The Name of a *Collyrium*, deſcribed by *Aetius*, *Tetrabib.* 2. *Sect.* 4. *Cap.* 113.

PLACITIS, πλακίτις. A Species of CADMIA; which ſee. It is, alſo, a Name for a cruſtaceous Sort of Alum.

PLADAROTES, πλαδαρότης. A Diſorder of the Eye-lids, conſiſting in an Eruption of ſmall, ſoft, diſcoloured Tubercles, on their internal Surface.

PLADOS, πλαδος. A redundant and ſuperfluous Humidity, rendering any Part lax and weak.

PLAGULÆ. Compreſſes, or Bolſters.

PLANETES PYRETOS. An erratic Fever; that is, one which is anomalous, and preſerves no regular Period, or Type. The Word is, likewiſe, apply'd to other Diſtempers, as the Gout, when irregular.

PLANTIES. The Sole of the Foot.

PLANTA. A Plant, or Vegetable. See BOTANY. *Planta Noctis* is a minute itching Puſtule, which breaks out in the Night. *Caſtellus*. The Sole of the Foot.

PLANTAGINELLA. A Name for the *Plantago*; *aquatica*; *minima*.

PLANTAGO.

The Characters are;

The Calyx is monophyllous, quadrifid, tubulous, and very tender. The Flower in it is monopetalous, ſhaped ſomewhat like a Baſon, quadripartite, and expanded in form of a Star: The Ovary is guarded by four long Stamina; whence ſome take the Flower to be apetalous. The Fruit is a Shell, almoſt of an oval, or conic Form, when ripe, opening tranſverſly into two Parts (one of which reſts upon the other); and is divided by an Interclofure into two Capſules, full of oblong Seeds.

Boerhaave mentions ſeventeen Species of *Plantago*; which are,

1. Plantago; latifolia, roſea; flore expanſo. *C. B. P.* 189. *J. B.* 3. 703.

2. Plantago; latifolia; roſea; floribus quaſi in Spica diſpoſitis. *C. B. P.* 189. *Plantago, roſea.* J B. 3. 503.

3. Plantago; latifolia; ſinuata. *C. B. P.* 189. *Tourn. Inſt.* 126. *Boerh Ind A.* 2. 100. *Plantago vulgaris, Septinervia.* Offic. *Plantago latifolia vulgaris.* Park. Theat. 493. Raii Hiſt. 1. 876. Synop. 3. 314. *Plantago latifolia.* Ger. 338. Emac. 417. *Plantago major, folio glabro, non laciniato, ut plurimum.* J. B. 3. 502. GREAT PLANTAIN.

The Root of the Plantain is thick at the Head, having many whitiſh Fibres growing from it. The Leaves are pretty broad, large and oval, ſomewhat waved about the Edges, and having ſeven large Nerves running through the whole Length of the Leaves, and even the broad hollow Foot-ſtalks, into the Root. The Flowers grow in long Spikes, above half the Length of the thick Foot-ſtalk, being ſmall and ſtaminous, cut into four Parts, which are ſucceeded by two ſmall oblong ſhining brown Seeds, hollowed in on the one Side, growing in little roundiſh Capſulæ, which open horizontally, when the Seed is ripe. It grows everywhere by the Way-ſide, and flowers in *May*. The whole Plant is uſed.

Plantain is cold, dry, and binding, and uſeful in all Kinds of Fluxes and Hæmorrhages, as ſpitting and vomiting of Blood, bleeding at the Noſe, the Exceſs of the Catamenia, or Lochia, as, alſo, for the involuntary making of Urine, its Heat and Sharpneſs, and the Gonorrhœa. It is, likewiſe, good to ſtop the Bleeding of Wounds, and to conſolidate their Lips.

The only officinal Preparation is the ſimple diſtilled Water. *Miller's Bot. Off.*

Its Leaves are bitter, aſtringent, and give a faint red Colour to the blue Paper; the Roots give it a deeper, and are only aſtringent; which ſhews, that in the Leaves the Sal Ammoniac, and the terreſtrial Parts of this Plant, are clogged with a great deal of Sulphur; thus the Plantain is vulnerary, reſolving and febrifugous. *Tragus* commends it very much for the Phtiſic. In the Country they drink the Juice, from two Ounces to four, at the firſt Acceſs of the Paroxyſm of intermitting Fevers; two Drams of the Extract of this Plant, or a Dram of its Seed, reduced to Powder, cure a Looſeneſs, and all Sorts of Hæmorrhages. The Ptiſan and Water of Plantain have the ſame Virtues. They are preſcribed in the Dyſentery, ſpitting of Blood, in the immoderate Flux of the Piles, or Terms, for the Whites, and Loſſes of Blood. In fine, the Plantain is uſed in all vulnerary and deterſive Potions. In the Inflammation of the Eyes, *Camerarius* made a Collyrium, with the Juice and Leaves of this Plant mixed with Roſe-water and Sugar. *Simon Paulli* uſed the Extract of Plantain, and the Decoction of Sarſaparilla, to cure a young Man that made bloody Urine, after a Gonorrhœa. The Gargariſm of Plantain is excellent for the Diſeaſes of the Throat; this Plant is an Ingredient in the Powder which *Julian Paulmier* has preſcribed to cure Madneſs. *Martyn's Tournefort.*

4. Plantago; latifolia; incana. *C. B. P.* 189. *Tourn. Inſt.* 126. *Boerh. Ind. A.* 2. 100. *Plantago incana.* Offic. Ger. 338. Emac. 419. Raii Hiſt. 1. 877. *Plantago major incana.* Park. Theat. 493. Raii Synop. 3. 314. *Plantago major hirſuta, media à nonnullis cognominata.* J. B. 3. 504. HOARY PLANTAIN.

It grows in gravelly Places, and flowers in *June*. The Leaves are in Uſe, and agree in Virtues with thoſe of the *Great Plantain*, and may be ſubſtituted in their ſtead. *Dale.*

5. Plantago; latifolia; hirſuta; minor. *C. B. P.* 189.

6. Plantago; lato, ſanguineo folio. *H. R. Monſp.*

7. Plantago; latifolia, glabra; pedunculi foliis, & Spica, longiſſimis.

8. Plantago; latifolia; Spica multiplici, ſparſa. *C. B. P.* 189.

9. Plantago; anguſtifolia; major. *C. B. P.* 189. *Tourn. Inſt.* 127. *Boerh. Ind. A.* 2. 100. *Plantago anguſtifolia, Quinquenervia.* Offic. *Plantago Quinquenervia.* Ger. 341. Emac. 422. Raii Hiſt. 1. 877. Synop. 3. 314. *Plantago Quinquenervia major.* Park. Theat. 495. *Plantago lanceolata.* J. B. 3. 505. RIBWORT.

This Plantain has longer and much narrower Leaves than the common Plantain, ſharp-pointed, and having five remarkable Ribs, or Nerves, running quite thro' them, to the Root, which is leſs, and more ſtringy, than the common Plantain. The Flowers grow at the End of long ſlender Stalks, in oblong Spikes, about an Inch long; they are ſmall and ſtaminous, with white Apices. The Seed grows like that of the common Plantain, but is ſomewhat larger. It grows in Fields and Meadows, and flowers in *May* and *June*; the Leaves are uſed.

They are reſtringent and vulnerary, and may be uſed to the ſame Purpoſe with the common Plantain. Some commend the Juice of it, given before the Fit of an Ague, to prevent its coming. *Miller's Bot. Off.*

Mr. *Boyle* highly recommends a Dram of the Powder of the Leaves given in the Conſerve of red Roſes, for a Tertian.

10. Plantago; trinervia; folio anguſtiſſimo. *C. B. P.* 189. *Prodr.* 98.

11. Plantago; anguſtifolia; paniculis Lagopi. *C. B. P.* 189. *Prodr.* 98.

12. Plantago; anguſtifolia; albida; Hiſpanica. *Tourn. Inſt.* 127. *Boerh. Ind. A.* 2. 101. *Holoſtium.* Offic. *Holoſtium Salmanticum.* Ger. 342. Emac. 423. Park. Theat. 498. *Holoſtium hirſutum albicans majus.* C. B P. 190. *Holoſtium Plantagini ſimile.* J. B. 3. 508. Raii Hiſt. 1. 880. SPANISH PLANTAIN.

This Species grows in ſandy Places, and flowers in *April* and *May*. It is a vulnerary Plant, and is principally of Uſe in Hernias.

13. Plantago; anguſtifolia; minima; Maſſilienſis, Lagopi capitulo. *T.* 127.

14. Plantago; Orientalis; folio Scorzoneræ. *T. Cor.* 5.

15. Plantago; anguſtifolia; ſerrata; Hiſpalenſis. *C. B. P.* 189.

16. Plantago; Cretica; minima; tomentoſa; caule aduncо. *T. Cor.* 5. *Holoſteum, ſeu Leontopodium, Creticum.* C. B. P. 190. *Leontopodium.* Alpin. Exot. 114.

Proſper Alpinus takes this for the *Leontopodium* of *Dioſcorides*, and deſcribes it as a ſmall Plant, two Digits in Height; which, from a long ſlender Root, produces five or ſeven hairy Leaves, three or four Digits in Length, which, near the Root, are covered with a thick Down. Among the Leaves, near the Root, are little Heads bending downwards from their Stalks, in a wreathed Poſture, and bearing black Flowers, which are ſucceeded by Seeds, involved in ſo thick a Down, that they can hardly be taken out of it. I have often, ſays *Proſper Alpinus*, received this Plant dry'd from *Candy*; and, having produced it from the Seed, found none of its Characters diſagreeable with thoſe of the *Leontopodium.* But one thing, he thinks, ought to be obſerved, which is, what *Dioſcorides* has written of the *Catanance*, that when it is dry'd and withered on the Ground, it ſhrinks and contracts itſelf into the Figure of the Claws of a dead Kite. Now this Plant *Bellus* plainly proves to be the *Leontopodium*, and not the *Catanance*, ſince it has neither the Leaves of the *Coronopus*, nor the Seeds of the *Orobus*, which are aſcribed to the *Catanance*, but rather of the *Pſyllium.* But, I am inclined to believe, he ſays, that either the *Leontopodium*, and *Catanance*, are the ſame Plant, or, at leaſt, are not different in Species; and the rather, becauſe *Dioſcorides* ſays of both of them, that they are employ'd as Philtres, or Medicines to procure Love. *Proſper Alpinus de Plantis exoticis.*

17. Plantago; anguſtifolia; major; foliis non dentato, rigidiori, ac radice repente. *H. C. Suppl.* 3. *Boerh. Ind. alt. Plant. Vol.* 2.

Plantain has an aſtringent Virtue, without any manifeſt Acrimony. It is of Service in piſſing or ſpitting of Blood, and under an immoderate Flux of the Lochia; in which Caſes it never fails the Hopes of the Phyſician. Externally, it is of Uſe in Inflammations, being apply'd to the Parts affected. It is a Plant of excellent Uſe in a Diarrhœa, Hæmorrhages, and Diſeaſes of the Eyes. The bruiſed Leaves are good to cleanſe and conſolidate old Wounds and Ulcers. Their Juice is very proper in intermitting Fevers, and in a Phthiſis; the diſtilled Water, mixed with Roſe-water, is a good Remedy for Inflammations of the Eyes; the Water injected is of Service in a Gonorrhœa, and the Decoction of the Leaves makes a proper Gargariſm in Diſeaſes of the Fauces. *Hiſt. Plant. adſcript. Boerhaav.*

PLANTAGO AQUATICA.

The Characters are;

The Root is very full of Fibres, which unite in a Bulb; the Leaves are like thoſe of the *Plantago*; the Stalk is erect, and bears ſomething like an Umbella. The End of the Pedicle is unfolded into a monophyllous trifid Calyx, which is firſt expanded like a Star, and, afterwards, retracted backwards. The Flower is tripetalous, roſaceous; the Petals proceeding from the Margin of the reflexed Calyx; the Stamina are ſix in Number, two from the Origin of each Petal. The Ovary becomes a Fruit, conſiſting of a Congeries of Seeds, collected, in the large Species, into a triangular Form; in the leſſer, into an echinated, or prickly Ball, each Seed furniſhed with its proper Tube.

Boerhaave mentions three Species of *Plantago Aquatica*; which are,

1. Plantago; aquatica; latifolia. *C. B. P.* 190. *Boerh. Ind. A.* 45. *Plantago aquatica.* Offic. J. B. 3. 787. Raii Hiſt. 687. Synop. 3. 257. *Plantago aquatica major.* Ger. Emac. 417. Park. Theat. 1245. *Plantago aquatica major, Limonium verum Dioſcoridis & Antiquorum.* Phyt. Brit. 94. *Aliſma.* Dill. Cat. Giſſ 126. *Aliſma, Doronicum Pannonicum.* Mont. Plant. Var. Ind. 36. *Ranunculus paluſtris Plantaginis folio ampliore.* Tourn. Inſt. 292. WATER PLANTAIN.

It grows in watry Places, and flowers in *June*, and the Root is in Uſe.

Schwenckfield ſays, that it cures the falling down of the Anus, and mitigates the Redneſs and Inflammation of the Gout, and the Pain of the Head, proceeding from a cold Cauſe; and is a Remedy for piſſing and ſpitting of Blood. The Juice, as *Roſlin* ſays, conſumes the Milk in the Breaſts. *Dale.*

2. Plantago; aquatica; anguſtifolia. *C. B. P.* 190. *Ranunculus, paluſtris, Plantaginis folio anguſtiori.* T. 292.

3. Plantago; aquatica; minima. *Cluſ. H.* 110. *Plantaginella, paluſtris.* C. B. P. 190. *Ranunculus aquaticus, Plantaginis folio anguſtiſſimo.* T. 292. *Boerh. Ind. alt. Plant.*

It is called *Plantago aquatica*, becauſe its Leaves are like thoſe of the *Plantago terreſtris.* Many think it the *Damaſonium* of the Antients; but what is ſaid of the *Damaſonium*, does not ſeem, to me, to agree with this Kind. As for M. *Vaillant*, he thought it the *Damaſonium*, becauſe *Lobel* calls one Species of the *Plan-*

tago by that Name. *Tournefort* refers the whole Kind to the *Ranunculus*, but I know not for what Reaſon; for their Leaves and Flowers are different.

The Taſte ſhews this to be an acrimonious Plant, tho' the Generality of Botaniſts, among whom is *Matthiolus*, ſay, it is of a cold Quality. But this Error is corrected by *Geſner*, *Bauhine*, and others, who make it a Plant of a very heating Nature. The Reaſon why it was thought to be cold was, I conceive, becauſe the *Plantago* is refrigerating; whence they thought the *Plantago aquatica* to be of the ſame Nature. The Plant then is acrimonious and penetrating, whatever may have been ſaid of its cooling and drying Qualities. The Leaves bruiſed, and applied to the Breaſts, are a ſovereign and approved Secret, as *Timach* aſſures us, for ſuddenly conſuming and drying up the Milk therein. *Hiſt. Plant. adſcript. Boerhaav.*

PLANTARIS MUSCULUS, or TIBIALIS GRACILIS.

This is a ſmall pyriform Muſcle, ſituated obliquely in the Ham, below the external Condyle of the Os Femoris, between the *Popliteus* and *Gaſtrocnemius Externus*; and its Tendon, which is long, flat, and very ſmall, runs down on the Side of the *Gaſtrocnemius Internus*, all the way to the Heel.

The fleſhy Body, which is only about two Inches in Length, and one in Breadth, is fixed by a ſhort, flat Tendon, above the outer Edge of the exterior Condyle of the Os Femoris, on one Side of the *Gaſtrocnemius Externus*. From thence the fleſhy Body runs obliquely over the Edge of the *Popliteus*, and terminates in a very ſmall, long, flat Tendon.

This Tendon runs between the Body of the *Gaſtrocnemius Externus* and *Soleus*, all the way to the inner Edge of the upper Part of the *Tendo Achillis*; and from thence continuing its Courſe downward, it joins this Tendon, and is inſerted together with it, in the Outſide of the poſterior Part of the Os Calcis, without communicating with the *Aponeuroſis Plantaris*.

Sometimes this Muſcle is wanting, and ſometimes it is ſituated lower down.

From the Deſcription of the *Tibialis Gracilis*, we ſee evidently, that it can have no Uſe with relation to the Sole of the Foot. The Uſe aſſigned to it by others, of extending the Tarſus, and thereby aſſiſting the *Gaſtrocnemii* and *Soleus*, ſeems to me to be very uncertain; both becauſe of the great Diſproportion in its Size, and the Obliquity of its Courſe. If the *Soleus* were not cover'd by the *Gaſtrocnemii*, the *Tibialis Gracilis* might be imagined to ſerve as a *Frænum*, in bracing down that Muſcle, and hindering it from ſwelling too much; but the ſmall Number and Direction of its Fibres would ſtill render it unfit for that Function.

Till its true Uſe is evidently diſcover'd by ſome lucky Obſervation, there is, in the mean time, ſome Ground to think, that it hinders the Capſular Ligament of the Knee from being compreſs'd in the Flexion of that Joint; both becauſe of its Adheſion to that Ligament, and becauſe of the Obliquity of its Courſe; eſpecially ſince the neighbouring Portion of the ſame Ligament ſeems to receive the ſame Aſſiſtance from a tendinous Expanſion of the *Semi-membranoſus*. *Winſlow's Anatomy.*

PLASTICUS, πλαστικὸς, from πλάσσω, to form. Formative, or endued with a Faculty of forming.

PLATÆ, πλάται. The *Scapula*.

PLATAMON, πλαταμών. A ſmooth low Rock, prominent out of the Sea. *Galen, Exeg.*

PLATANARIA. A Name for the *Sparganium*; *ramoſum*.

PLATANUS.

The Characters are;

The Leaves are large, and laciniated; the Flower is amentaceous, form'd into a globular Figure, and conſiſting of a Multitude of Stamina. The Fruit, which is produced at a Diſtance from the Flower, is ſpherical, and contains vaſt Numbers of long, apiculated Seeds, intermix'd with much Down.

Boerhaave mentions two Species of *Platanus*; which are,

1. Platanus; Orientalis; verus. *Park. Theat.* 1427. *Raii Hiſt.* 2. 1706. *Tourn. Inſt.* 590. *Boerh. Ind. A.* 2. 209. *Platanus.* Offic. C. B. P. 431. J. B. 1. 170. Ger. 1304. Emac. 1489. THE PLANE-TREE.

The *Platanus Orientalis*, ſo much celebrated by *Herodotus*, and other Writers, is, alſo, called *Platanus latus*, becauſe it extends its Branches to ſuch a Compaſs, as to be able to cover more than a thouſand Men under its pleaſing Shade. Under this Tree, *Hippocrates* found *Democritus*, and ſaluted him. *Hiſt. Plant. adſcript. Boerhaav.*

The tender Leaves of the *Platanus*, boil'd in Wine, and apply'd as a Cataplaſm, ſtop Defluxions upon the Eyes, and give Relief under Tumors and Inflammations. The Bark, boil'd in Vinegar, makes a Collution for the Tooth-ach. The green Balls or Fruit, drank in Wine, cure the Bites of Serpents; and made into an Ointment with Fat, are a Remedy for Ambuſtions. The Duſt, or Down, of the Fruit, or Leaves, falling into the Eyes, or Ears, injures the Sight and Hearing. *Dioſcorides, Lib.* 1. *Cap.* 107.

2. Platanus; Occidentalis; aut Virginienſis. *Park. Theat.* 1427. *Boerh. Ind. alt. Plant.*

PLATANUS is, alſo, a Name for the *Papaya*; *fructu Meoſ-peponis effigie.*

PLATEA. The Pelican.

PLATIASMOS, πλατιασμός. A Fault in Pronunciation, when a Perſon opens his Mouth too wide, which hinders him from ſpeaking diſtinctly. *Gorræus.*

PLATYCORIA, πλατυκορία. A preternatural Dilatation of the Pupil of the Eye, from a paralytic Cauſe. *Aretæus de Sig. et Cauſ. diuturn. L.* 1. *C.* 7.

PLATYOPHTHALMON. A Name for Antimony; ſo call'd, becauſe it was uſed by Women, for rendering their Eyebrows and Eye-laſhes black and beautiful.

PLATYPHYLLOS. A Name for the *Quercus*; *latifolia*; mas; quæ brevi Pediculo eſt. And for the *Quercus*, *latifolia*; *fœmina.*

PLATYSMA, πλάτυσμα. Any thing which is flat, and broad. Thus a Piece of Cloth, or Plaiſter, or Plate of Metal, are call'd by this Name.

PLATYSMA MYOIDES is the Name by which *Galen* calls the muſcular Expanſion, call'd *Quadratus Genæ*. See CAPUT, and LABIA.

PLATYSTERNOS. Broad-cheſted. An Epithet for a Perſon poſſeſs'd of a broad STERNUM.

PLECHAS, πλαγχάς. The Region of the Body, which is terminated on each Side by the Thighs; forward by the *Pudenda*, and backwards by the Anus. *Hippocrates.*

PLECTANE, πλεκτανὴ, or πλέγμα. A *Plexus*, or Complication of Veſſels. Plectanæ, πλεκτάναι, are the *Cornua* of the *Uterus*.

PLECTRUM. A Name for the Styloide Proceſs of the *Os Petroſum*; for the *Uvula*; and, in ſome Authors, for the Tongue.

PLEGMA. The ſame as PLECTANE.

PLEGMARIA. See SELAGO

PLEIAS, πλειὰς, or πλειάς, in the Plural Number *Pleiades*, in Latin *Vergiliæ*, is a Conſtellation of ſeven Stars in the Sign *Taurus*; but, in *Hippocrates*, it ſignifies the Fall of theſe Stars, which is at the End of Autumn, or about the latter End of *October*. This is what *Galen* intimates, *Com.* 1. *in* 1 *Epid.* where he ſays, "that *Hippocrates* plainly ſhews, that he knew the Fall of the "*Pleiades* to be the End of Autumn; which, therefore, by a "compendious way of Expreſſion, he calls πλειάς." Thus *Galen*. And in Confirmation of what he ſays, we may often obſerve, that *Hippocrates* uſes the Words ὑπὸ πλειάδος, to ſignify the End of Autumn.

PLEMMYRIS, πλημμυρὶς, is, properly, the ſame as πλημμύρα, and ſignifies the flowing of the Tide, as *Heſychius* expounds it; but is, by a Metaphor, uſed to expreſs a Redundance, or Overflowing, of Humidities, or, as *Galen* expounds it, πλῆθος ὑγρότητος, "Plenty of Moiſture."

PLEMNE, πλήμνη, is expounded, in *Galen's* Exegeſis, by τροχοῦ χοινικὶς, "the Nave of a Wheel." The Word frequently occurs, *Lib. de Fract. Plemnæ*, πλήμναι, in the plural Number, as expounded by *Heſychius*, are the Perforations round the Nave, or Axis, into which the Spokes of the Wheel are inſerted. *Foeſius.*

PLENILUNUM. The Full Moon. At this Time, many Diſtempers are ſaid to be exaſperated; as Madneſs, the Epilepſy, and Diſorders ariſing from Worms. See ASTRONOMIA.

PLENNA, πλέννα, the ſame as BLENNA, Mucus.

PLERES ARCHONTICON. The Name of a compound cephalic Powder. *Lemery Pharmacopée Univerſelle. Blancard.*

PLEROSIS, πλήρωσις. Repletion; or a recruiting a Body, worn out, or reduced, by Sickneſs, or Evacuations.

PLESMONE, πλησμονή. Plenitude, Satiety, or Repletion.

PLETHORA. πληθώρα, from πλῆθος, Plenitude. A Plenitude, or Redundance of Blood, and Humours.

The Diſorders ariſing from a Defect of the Circulation of the Humours, are, in Nature, pretty much the ſame with thoſe ſpontaneouſly produced by their Stagnation. In this Caſe the Air is of great Importance, ſince, when admitted, it accelerates ſpontaneous Corruptions, which would otherwiſe be brought on more ſlowly; ſo that the Knowledge and Cure of the former, are the ſame with thoſe of the latter; and from all theſe, the Nature, Cauſe, Effects, Signs, and Remedies of a Plethora may be duly underſtood, provided the following Circumſtances are adverted to.

The Fluids of the human Body, are either crude, and, in ſome meaſure, partake of the Nature of the Aliments; or they have acquired thoſe Qualities which are peculiar to the human Fluids: Now, if we conſider what happens both to the crude and aſſimilated Fluids of the human Body, whilſt the Circulation is diminiſhed, it will evidently appear, that nearly the ſame Changes will happen to the Fluids, as if they had been left to themſelves, and in a State of Reſt; for the human Blood, when ſuffered to reſt for a few Moments, is ſeparated into Serum, and a red coagulated Subſtance Now, when the Circulation is conſiderably diminiſhed, a Misfortune of the like Nature, of courſe, begins to be formed; and hence it is, that polypoſe Concretions are ſo frequently obſerved after chronical Diſorders. But all crud Ali-

ments are, by the Efficacy of the Circulation of the Blood, assimilated to the human Fluids. Now if the Circulation of the Humours is diminished, the Aliments longer retain their original Quality, and are spontaneously corrupted.

It must be observed, that a free Access of the Air accelerates all spontaneous Degenerations of the Humours; for no Fermentation happens without the Approach of the Air, and whilst the Atmosphere is excluded, a Putrefaction of the Humours is far more slowly formed, than it would otherwise be. Thus, in dropsical Patients, stagnant Water often remains for some Months in the Abdomen, with scarce any Degree of Corruption; but it soon becomes putrid upon the Access of the Air.

Whilst, during the last Months of Gestation, the Blood becomes almost stagnant in the distended Vessels of the Uterus, it does not become corrupted; but, after Delivery, upon the Approach of the Air, the Lochia are highly fetid. After violent Contusions, when the Blood remains under the sound Skin, it hardly becomes putrid; but, being gradually attenuated and absorbed, as it were, disappears. But when blood taken from the Veins is exposed to the free Air, it quickly becomes putrid. Hence, whilst, in the interior Parts of the Body, the Humours either become stagnant, or move slowly, they do not suddenly degenerate into a putrid State, when the Air has not a free Access to them.

But as a Plethora, or increased Quantity of Fluids, retards their Circulation, so its Nature, Causes, Signs, and proper Remedies, are to be deduced from the following Considerations:

A Plethora is a larger Quantity of laudable Blood, than is capable of undergoing those Changes, which must necessarily happen for the Purposes of Life, without inducing Diseases.

A Redundance of laudable Blood is what we call a Plethora: Hence this Circumstance can never, in its own Nature, be a Disorder; since it only supposes a preternatural Quantity of laudable Humours, whilst, in every other respect, the Patient is sound. Hence *Helmont* imagined, that a Plethora was unjustly classed among the Number of Diseases, since, according to him, what is laudable, cannot be peccant in Quantity. Now a Plethoric Patient is such an one, as is not as yet sick, but at the same time is in such a State of Plenitude, that, if the Humours are more increased or rarefied by Heat, or any other Cause, the natural Functions are, by these means, injured. Hence a Plethoric Person may be sound, though at the same time in the greatest Danger; for, by an increased Heat of the circumambient Atmosphere, the smallest Error with respect to the Non-naturals, or any violent Passion of the Mind, this sound State may be changed into the most dangerous Disease. But it is impossible to prevent such a Misfortune sometimes happening to the most healthy Person. Hence *Hippocrates*, in *Aphor.* 3. *Sect.* 1. informs us, "That Persons in a good Habit of Body "are in a State of Danger; and that, since they cannot long "continue in the same State, nor change for a better, they "must, of course, decline into a worse; for which Reason "such a State ought, with the greatest Expedition, to be re-"moved."

A Plethora, therefore, does not import every Increase of the Humours, but only an Augmentation of the laudable Juices. Hence *Galen*, in *Meth. Medend. Lib.* 13. *Cap.* 6. informs us, "That a mutual and equable Increase of the Fluids is called a "Plethora; whereas, when the Body abounds with yellow or "black Bile, Phlegm, or serous Humours, the Disorder is "called a *Cacochymy*, and not a Plethora.".

A Plethora was, by the Antients, distinguished into that affecting the Vessels, and that influencing the Strength. When the Vessels are so preternaturally turgid with the laudable Juices, that they are ready to break, the Misfortune is called simply a *Plenitude*, or *Plethora of the Vessels*. But when the Vessels are not too full of laudable Humours, but yet contain more than the weak vital Force is able to put into a due Circulation, the Disorder is called a *Plenitude*, or *Plethora, with respect to the Strength*. Thus *Galen*, in his Treatise *de Plenitudine*, *Cap.* 3. informs us, "That there are two Species of Ple-"thoras, one affecting the Strength and vital Powers; and the "other the Vessels." And in his Treatise *de Curandi Ratione per Venæsectionem*, *Cap.* 6. he tells us, "That the more heavy "a Person perceives himself, the more a Plethora, with re-"spect to the Strength, is increased; whereas a Plethora, with "respect to the Vessels, is discovered by a Sense of Tension."

But a Plethora, in the common Acceptation of the Word, is confined to the Vessels, and in this Sense we now consider it.

This Species of Plethora, then, is generated by every Cause which produces a large Quantity of laudable Chyle and Blood, and at the same time hinders their Attenuation, Consumption, and Perspiration.

By the Functions of Life, the Solids are necessarily worn, and the Fluids dissipated. Hence what is lost, ought to be recruited by Aliments. If every Day as much is restored to the Body as is lost, there remains a perfect Equilibrium, the most perfect Sign of confirmed Health; for *Sanctorius* has shewn, by his Experiments, that the Body is in the most perfect State of Health, when daily, after the Digestion of the Aliments, it returns to its usual Weight. Now the Restitution of what is lost, is produced by laudable Chyle, and the Blood formed of it. If, therefore, by whatever Cause, there is a larger Quantity of laudable Chyle and Blood, than is sufficient for restoring what is lost, generated, there will be an Accumulation of superfluous Juices gradually produced, and such an Accumulation will be greatly increased, if the Efficacy of those Functions is diminished, by which the Fluids ought to be attenuated, consumed, and dissipated, by the usual Ways of Excretion.

Among the other Causes of a Plethora, we may justly reckon the great contractile Force of the chylopoetic Organs, Heart, and Arteries; a lax Texture of the Veins, and other small Vessels; mild Aliments, easily convertible into Chyle; much Sleep; an easy Mind; a Want of due muscular Motion, and habitual *Evacuations of Blood*, whether natural or artificial.

As for the contractile Force of the chyloportic Organs; whilst the Viscera, subservient to the Change of the Aliments into laudable Chyle, are sound and strong, there is a large Quantity of Chyle prepared from the Food and Drink; and whilst the like Strength remains in the Heart and Arteries, a laudable Blood is generated from this large Quantity of Chyle; whilst at the same time the Veins, being naturally lax, easily yield to the distending Fluid, and receive its superfluous Quantity, unless a Depletion of them is produced by proportionably greater Motion and Exercise; for the more languid the Circulation is, the more Humours are accumulated in the Veins: Whereas, on the contrary, the brisker the Motion of the Blood is, the Arteries become the fuller, and the Veins the more empty: Whilst Drunkards often destroy large Quantities of Liquor, they would be suffocated, unless the Veins were capable of receiving the superfluous Liquor; for which Reason their Veins are, at such times, greatly inflated. When, therefore, the chylopoetic Organs prepare a large Quantity of Chyle; when the Viscera, subservient to Sanguification, convert this Chyle into Blood, and there is, at the same time, a Laxity of the Veins, there must necessarily be a Redundance of laudable Blood accumulated.

As for mild Aliments; all acrid Substances, by their stimulating Quality, increase the Circulation of the Blood; and an increased Motion of the Blood diminishes the Quantity of the Juices: Mild Aliments, therefore, of the ripe, farinaceous kind, Broths prepared of Flesh, the tender Fleshes of young Animals, and soft Pot-herbs, from all which a large Quantity of laudable Chyle is generated, have a Tendency to produce a Plethora.

As for much Sleep; it is shewn, under the Article FIBRA, how plentiful Sleep conduces to the Relaxations of too rigid Fibres. Now the relaxed Vessels easily yield to the distending Fluids, for which Reason they are the more filled. Besides, during Sleep, what was lost by the Functions of Sensation, and voluntary Motion, is restored. On the contrary, whilst we are awake, what was accumulated during Sleep, is consumed. Hence those, who are fatigued by the Labours of the Day, rise brisk and vigorous, after a salutary Sleep. When, therefore, any Person indulges himself in a great deal of Sleep, the more the Humours are daily accumulated, and the less of them is dissipated. Hence arises a Plethora. Hence, also, it is, that Habits exhausted by violent Disorders are so happily restored by long Sleep; and Bears sustain Life all the Winter by sleeping, without any manner of Food.

As for an easy Mind; that Serenity of Mind contributes greatly to the Preservation of Life, is sufficiently obvious. Now the Effect of the best Health is a Plethora: Besides, violent Passions, and racking Cares, palpably prey on the Body. And *Galen*, in his *Method. Medend. Lib.* 14. *Cap.* 15. mentions the Cares of the Mind, among the other Methods of curing Obesity or Fatness.

As for a Want of due muscular Motion; after Man, for the Punishment of his Sin, was sentenced to earn his Bread by the Sweat of his Brow, bodily Exercise became necessary for the Preservation of Health: Accordingly Persons, who led delicate and idle Lives, are afflicted with the most terrible Disorders. *Hippocrates*, in his Treatise *de Victus Ratione Sanorum*, *Lib.* 1. informs us, "That a Person, who eats heartily, cannot be "sound, without Exercise; for though Aliments and Exercise "have different Effects, yet they mutually concur to the Pre-"servation of Health; since Labour consumes what is super-"fluous, whilst Aliments and Drink recruit what is lost." And in the same Treatise, *Lib.* 3. he orders us to consider,

"Whe-

" whether the Aliments ſurpaſs the Exerciſe, or the Exerciſe " the Aliments, ſince, when either happens, Diſeaſes are " produced; whereas, when they are equal, and duly pro- " portioned to each other, Health is preſerved.

Such an Equilibrium, therefore, is requiſite between the Aliments and Exerciſe, that as much may be daily diſſipated, as is taken in by way of Aliment. Whilſt the ſame Quantity of Food is uſed, and the Exerciſe leſſened, a Plethora begins to be formed. When Horſes are well-fed in Stables, they ſoon become fat, but when exerciſed in hard Running for ſome Days, the additional Fat is ſoon diſſipated.

As for uſual Evacuations of Blood, whether natural or artificial; it is certain from Experience, that the oftener a Man is blooded, provided he is not quite weakened by it, his Veſſels are afterwards rendered more turgid with Blood. Women have every Month a natural Evacuation of ſuperfluous Blood; and Men, accuſtomed to repeated Veneſections, are, about the uſual times of Veneſection, afflicted with the ſame Diſorders Women labour under, in conſequence of a Retention of the Menſes: Thus at laſt theStrength of ſuch Men degenerates into the lax and feeble State of Woman. Mr. *Dodart*, in *Hiſt. de l'Academie des Sciences*, *An.* 1707. obſerves, that in a Man, not weakened by Veneſection, ſixteen Ounces of Blood taken from the Veins were reſtored in five Days time. Hence it is obvious, that repeated Veneſection diſpoſes to a Plethora, whilſt the Blood is, by that means, ſo ſoon regenerated, though the Body is rendered leſs firm, more lax, and conſequently its Veſſels more eaſily filled. I ſaw a Woman, who, on account of violent and often-returning Paſſions of Mind, was blooded above ſixty times in a Year, and became ſo fat, that in a few Months ſhe weighed one hundred and fifty Pounds more, than in her natural State; but the Blood, being daily regenerated, laid a Foundation for repeated Veneſections, till, her whole Strength being deſtroyed, ſhe fell into a Dropſy. It doth not, therefore, ſeem to be a laudable Cuſtom for healthy Perſons to bleed frequently every Year, by way of Caution and Prevention; ſince, by that means, the Body is weakened, and diſpoſed for the more eaſy Repletion. *Galen*, who, in *Meth. Medend. Lib.* 9. *Cap.* 5. in certain Diſorders, recommends frequent and bold Veneſections, till the Patient faints away, condemns this Cuſtom in the following manner: " I hardly think it expedient to open a Vein often " every Year; becauſe, in conjunction with it, the vital Spi- " rits are evacuated; and, if theſe are greatly diminiſhed, the " whole Habit is refrigerated, and all the natural Operations " worſe performed."

All the Effects of a Plethora depend upon that Rarefaction of the Blood, which is to be aſcribed to its increaſed Velocity, and the Heat ariſing therefrom, or to other Cauſes, only to be known from Obſervation. Hence ariſes a Dilatation of the Arteries, both ſanguiferous and lymphatic, a Change of the Secretion, a Compreſſion of the ſanguiferous and lymphatic Veins, a Suffocation of the Circulation, an Inflammation, a Rupture of the Veſſels, a Suppuration, a Gangrene, and Death. ☞

All the Effects of a Plethora depend on the Rarefaction of the Fluids. When the Veſſels are furniſhed with too large a Quantity of laudable Blood, there may ſtill be a State of Health preſerved: But when, by whatſoever Cauſe, the Blood contained in the Veſſels is rarefied, then the Functions begin to be injured and impaired; and when, on ſuch an Occaſion, certain Changes appear in the Body, theſe are called the Effects of a Plethora; though they do not depend upon this Cauſe alone, ſince the Plethora is only the prediſpoſing, and the Rarefaction the exciting or occaſional Cauſe of them. From theſe two Cauſes, therefore, united, is formed the proximate Cauſe of theſe Phenomena; and as the exciting Cauſe, that is, the Rarefaction, puts the Plethora in Action, which alone, except in an high Degree, would not ſoon prove hurtful, hence, in that Senſe, the Effects of a Plethora are ſaid to depend upon the Rarefaction of the Fluids.

The Rarefaction of the Blood is to be aſcribed to its increaſed Velocity, and the Heat ariſing from that Circumſtance. When, in the ſame Time, a larger Quantity of Blood flows thro' the Veſſels, its Velocity is ſaid to be increaſed; but this cannot happen, without an increaſed Attrition of the Fluids on the Veſſels. Hence ariſes Heat, and the Heat produces Rarefaction: But all the Cauſes, which, from Experience, ſeem to rarefy the Blood, ſeem to produce this Effect, by increaſing the Celerity of its Motion, and the Heat ariſing from that Circumſtance. Now a Rarefaction of the Blood is alone ſufficient to produce all thoſe Effects, which ariſe from a Plethora; for if the Blood was doubly rarer than it is, it would be the ſame thing, with regard to the Veſſels, as if its Quantity was doubly increaſed. If, therefore, to a Plethora a Rarefaction of the Blood is added, all the Symptoms, capable of ariſing from a Plethora, will be augmented. Hence it is obvious, why all thoſe Medicines and Diſeaſes, which, in conſequence of an increaſed Velocity of the Blood, induce Heat, and conſequently Rarefaction, produce the Symptoms of a diſtending Plethora. When a pale and chilly Girl is affected with the Small-pox, there forthwith ariſe a Heat, Redneſs, and inflammatory Tenſion of the Veſſels, together with an intolerable Head-ach; not from an increaſed Quantity of the Blood, but from its Rarefaction, produced by an Acceleration of its Motion, and a conſequent greater Heat.

Hence ariſes a Dilatation both of the ſanguiferous and lymphatic Arteries. The Blood, when either increaſed in Quantity, or by Rarefaction, poſſeſſing more Space than it did before, will neceſſarily dilate the Veſſels in which it is contained, more than before; and hence both the Arteries and Veins will be diſtended, and the Blood cannot be ſo eaſily propelled from the Arteries into the too much diſtended Veins: Hence a greater Reſiſtance is made about the Extremities of the Arteries: For this Reaſon the Arteries will be more diſtended, by the Blood forced into them from the Heart. Now ſince, among the Cauſes enumerated by Phyſicians, why, from the ſame Blood, ſo various Liquors are ſecreted in various Parts, we may juſtly reckon the various Proportions which the ſecreting Ramifications bear to their Trunks, hence it is obvious, that, when this Proportion is diſturbed by a Dilatation of the Arteries, all the Secretions may, alſo, be diſturbed by that means.

As for a Compreſſion of the ſanguiferous and lymphatic Veins; in moſt Parts of the Body, Veins run along with the Arteries; and, when the Arteries are too tumid, they compreſs the adjacent Veins, which are furniſhed with weaker Coats: The compreſſed Veins convey their contained Blood to the Heart; the Heart forces it into the Arteries, and the Veins being compreſſed, are capable of receiving a ſmaller Quantity of it: Hence a ſtill greater Dilatation of the Arteries ſucceeds; and, at laſt, almoſt the whole Blood is accumulated in them, whilſt the Veins are more compreſſed and emptied.

As for a Suffocation of the Circulation of the Humours; this muſt neceſſarily happen, ſince, by theſe means, the Reſiſtance made to the Blood, to be convey'd out of the Left Ventricle of the Heart, is every Moment increaſed. Hence the Pulmonary Veins cannot ſo eaſily convey the Blood into the Left Ventricle of the Heart: For this Reaſon the Blood will begin to be accumulated in the Veſſels of the Lungs; the Reſiſtance made to the Right Ventricle of the Heart will be increaſed, and, at laſt, the Circulation of the Blood ſuffocated. Hence we obſerve, highly plethoric Perſons very red, with their ſmall Arteries dilated, and receiving the red Blood. At laſt ſuch Perſons, being, as it were, ſuffocated, begin to aſſume a livid Colour, and often die ſuddenly; unleſs, either by Nature or Art, the Veſſels are relieved, by leſſening the Quantity of Blood, and, conſequently, diminiſhing its Heat and Rarefaction.

As for an Inflammation; this muſt neceſſarily happen, on account of the groſs Humours which have entered the too much dilated Orifices of the minute Veſſels, and which cannot paſs through the narroweſt Parts of them.

As for a Rupture of the Veſſels; this happens principally in thoſe Parts where the Veſſels are moſt tender: Hence it is, that, in plethoric Patients, Arteries breaking in the Brain ſo often produce mortal Apoplexies: Hence, alſo, it is, that Spittings of Blood are ſo frequently obſerved to ariſe from a Rupture of the Pulmonary Veſſels, by the diſtending Blood in plethoric Patients.

As for a Suppuration and a Gangrene; theſe are the common Terminations of an Inflammation, which cannot be reſolved.

As for Death; this ſeems to happen, becauſe the too much diſtended Veſſels make ſo great a Reſiſtance to the Heart, that it cannot diſcharge its Contents. Hence the Circulation is ſuffocated: Or, becauſe the large Veſſels, being too turgid with Blood, compreſs the minute Veſſels in the Brain, Cerebellum, and Nerves; or, when, in conſequence of a Rupture of the Veſſels, the Humours neceſſary to Life are evacuated; or, laſtly, when, in conſequence of a Rupture of the Veſſels, the extravaſated Fluids deſtroy the Actions of the Viſcera, more immediately ſubſervient to Life.

A Plethora then, when preſent, is eaſily known; and its future Effects readily foreſeen.

A preſent Plethora is known, if the Cauſes which generate too large a Quantity of laudable Blood, and which are already enumerated, have preceded; if there is a great Redneſs in the whole Body, eſpecially in thoſe Parts in which the Veſſels appear naked, and uncovered with Skin, as in the Corners of the Eyes, the Tunica Adnata, the internal Parts of the Eye-lids; the internal Parts of the Noſtrils, the Mouth, Fauces, and Lips; if a great Heat is perceived, even at the Extremities of

the Body; if the Veins are inflated, and the Pulſe ſtrong and full; if, after violent Exerciſe, an increaſed Heat of the Atmoſphere, Wine, or any other heating Subſtances, the Patients perceive, in all their Muſcles, a ſoft, full, diſtending Tumor, together with a certain Immobility, ſo that they can hardly clinch their Fingers; then they begin to be ſluggiſh, lethargic, and have a Diſcharge of Tears from their Eyes.

In forming the Prognoſtic of a Plethora, we foreſee, that all the Symptoms already enumerated will happen; and particularly, that the Functions of the whole Brain will be diſturbed, becauſe, in the Head, all the Parts are naturally full. Hence, when the large Veſſels full of red Blood are diſtended, the other ſmaller Veſſels will be compreſſed; becauſe the Bones of the Cranium cannot yield. Hence all the Diſorders of the Brain, from the ſlighteſt Vertigo to the moſt fatal Apoplexy, may ariſe from a Plethora.

A Plethora is cured by Veneſection, Exerciſe, Watchings; a ſharp and acrid Diet, after due Evacuations; and by a gradual Omiſſion of theſe Evacuations.

By Veneſection. A Redundance of laudable Blood is the Cauſe of all the Misfortunes already enumerated. Every thing, therefore, which diminiſhes this Redundance, is beneficial. But this is beſt done by Veneſection, immediately after which all the Symptoms are relieved. A Phyſician never practiſes more rationally, than when he imitates the Ways and Methods, which Nature herſelf takes, in relieving Diſorders. Now we ſee, that both in Health, and under Diſeaſes, a Plethora, ariſeing either from a Redundance or Rarefaction of the Blood, is happily removed by a ſalutary Hæmorrhage, eſpecially from the Noſtrils. Hence, in young Perſons, in a perfect State of Health, at that Period of their Lives, when their Veſſels, now becoming ſtronger, begin more forcibly to reſiſt the Fluids, ſuch Evacuations of Blood are ſo frequently ſalutary, eſpecially in the Spring, when the Heat increaſes. For the ſame Reaſon, alſo, Hæmorrhages from the Noſe have often proved ſalutary in the moſt violent and acute Diſorders: Now Phyſicians, imitating theſe Efforts of Nature, order the Quantity of Blood to be leſſened by Veneſection; and if Symptoms indicate, that the Arteries are only highly diſtended, and the Veins collapſed, becauſe the Blood cannot paſs from the Arteries to the Veins, which frequently happens in acute, inflammatory Diſorders, then ſome of them venture to order Arteriotomy; and, as in large Arteries this cannot be done without Danger, the ſame Effect may more ſafely be produced by opening many ſmall Arteries by Scarifications. Hence *Proſper Alpinus*, in his Treatiſe *de Medicina Ægyptiorum*, informs us, that the *Egyptians*, among whom theſe acute Diſorders are frequent, greatly eſteem ſuch Scarifications.

Some, eſpecially of the Followers of *Helmont*, condemned Veneſection, as a Practice both cruel and uſeleſs: They believed, that, by Abſtinence from Aliments and Drink, the Redundance of the Humours was more effectually leſſened, ſince, by inſenſible Perſpiration, and the other Excretions, ſeveral Pounds of Humours are daily evacuated; which, however, are reſtored by Aliments and Drink. Hence they maintained, that ſince the natural Excretions continued to diminiſh the Fluids, whilſt what was loſt was not reſtored by Aliments and Drink, there was a greater Diminution of the Fluids, by Abſtinence for twenty-four Hours, than by the boldeſt Veneſection: But by this Method the moſt ſubtile Humours are only diſſipated from the Body, whilſt the red, thick Blood, diſtending the larger Veſſels, is hardly diminiſhed; which is the Circumſtance moſt required; and all the Humours become more acrid, whilſt no new Chyle is mixed with the Blood.

But tho' Veneſection leſſens the Redundance of the Blood, yet it not only leaves the Body equally ſubject to Repletion, but even diſpoſes more to the Generation of a freſh Plethora, as we have already obſerved. Hence it is neceſſary the Body ſhould be rendered ſo firm, as that it may not eaſily, for the future, accumulate a Redundance of Blood.

As for Exerciſe; this not only diſſipates what was retained during a State of Reſt, but, alſo, to corroborate the Solids, that they do not eaſily yield to the Fluids they contain. Thus we rarely find Perſons daily accuſtomed to hard Labour, plethoric, even though they ſhould be highly voracious: But Exerciſe is not proper, till by Veneſection the Veſſels are emptied; otherwiſe, being diſtended, a Rupture of them would very readily happen.

As for Watchings; much Sleep is reckon'd among the Cauſes of Plenitude; ſo that Watching muſt produce the oppoſite Effect.

As for a ſharp and acrid Diet after due Evacuations; ſoft Aliments eaſily changed by the Chylopoetic Organs, afford a large Quantity of Chyle. Hence the Quantity of Blood is daily increaſed, unleſs, by violent Exerciſe, the ſuperfluous Humours are diſſipated. Hence Nature has ſupplied new-born Infants with an highly ſoft Milk, already changed in the Mother's Body, becauſe, in that Age, a very quick, and daily Increaſe of the Humours is requiſite. But when the contrary is required, as in the Cure of a Plethora, for Inſtance, then harder Aliments of a more difficult Digeſtion, and acrid, aromatic, and ſtimulating Subſtances, prove beneficial; becauſe, by this means, leſs Chyle, and, conſequently, all other Circumſtances being alike, leſs Blood will be generated; and the Motion of the Humours being increaſed by acrid ſtimulating Subſtances, an Accumulation of them will not ſo eaſily happen. But before the Quantity of the diſtending Fluids is leſſened by Evacuants, acrid Subſtances are highly pernicious, leſt a Rupture of the too full Veſſels ſhould happen upon an Increaſe of the Motion of the Blood by means of ſtimulating Subſtances.

As for the gradual Omiſſion of uſual Evacuations; we have already obſerved how much frequent Veneſections diſpoſe to a frequent Plethora. Hence theſe Evacuations are to be omitted; but this is not to be done all at once, becauſe all ſudden Changes from uſual to unaccuſtom'd things are bad, eſpecially in this Caſe; for by frequent Veneſections the Body is habituated to accumulate a large Quantity of Blood, which unleſs removed, will produce all the Effects of a Plethora: For this Reaſon, ſuch uſual Evacuations are to be gradually leſſened as to their Quantity, and a greater Interval of Time put betwixt them, that they may be gradually diminiſhed without any Danger. In taking ſuch Meaſures, we imitate the ſalutary Method of Nature, about the Time when the Menſes begin to prove defective in Women; for then this Evacuation is naturally and gradually diminiſhed in Quantity, and its Returns appear at longer Intervals, till it at laſt totally ceaſes. But, when the Menſtrual Diſcharge ceaſes ſuddenly, it is generally productive of terrible Conſequences. *Van Sweiten.*

PLETHORICUS. An Epithet for a Perſon abounding with Blood, or labouring under a *Plethora*.

PLETHRON. The ſixth Part of a *Stadium*.

PLEURA. The Pleura is a Membrane which adheres very cloſely to the inner Surface of the Ribs, Sternum, and Muſculi Intercoſtales, Sub-coſtales, and Sterno-coſtales, and to the convex Side of the Diaphragm. It is of a very firm Texture, and plentifully ſtored with Blood-veſſels and Nerves, in all which it reſembles the Peritonæum, and, likewiſe, in that it is made up of an inner true membranous Lamina, and a cellular Subſtance on the Outſide, which is a Production or Continuation of the Lamina.

The cellular Portion goes quite round the inner Surface of the Thorax, but the membranous Portion is diſpoſed in a different manner. Each Side of the Thorax has its particular Pleura, entirely diſtinct from the other, and making, as it were, two great Bladders, ſituated laterally with reſpect to each other, in the great Cavity of the Breaſt, in ſuch a manner, as to form a double Septum, or Partition, running between the Vertebræ and the Sternum, their other Sides adhering to the Ribs and Diaphragm.

This particular Duplicature of the two Pleuræ is termed *Mediaſtinum*. The two Laminæ, of which it is made up, are cloſely united together near the Sternum and Vertebræ; but in the Middle, and toward the lower Part of the fore Side, they are ſeparated by the Pericardium and Heart. A little more backward they are parted in a tubular Form, by the Œſophagus, to which they ſerve as a Covering; and in the moſt poſterior Part, a triangular Space is left between the Vertebræ and the two Pleuræ from above downward, which is filled principally by the Aorta.

Before the Heart, from the Pericardium to the Sternum, the two Laminæ adhere very cloſely, and there the Mediaſtinum is tranſparent, except for a ſmall Space near the upper Part, where the Thymus is ſituated; ſo that in this Place there is naturally no Interſtice, or particular Cavity. The apparent Separation is owing entirely to the common Method of raiſing the Sternum, as was plainly demonſtrated by *Bartholinus*, in his Treatiſe of the Diaphragm, publiſhed at *Paris* in 1676.

The Mediaſtinum does not commonly terminate along the Middle of the Inſide of the Sternum, as the common Opinion has been. I demonſtrated, ſays *Winſlow*, in 1715. to the Royal Academy of Sciences, that, from above downward, it inclines toward the Left Side; and that if, before the Thorax is opened, a ſharp Inſtrument be run through the Middle of the Sternum, there will be almoſt the Breadth of a Finger between the Inſtrument and the Mediaſtinum, provided that the Sternum remain in its natural Situation, and the Cartilages of the Ribs be cut at the Diſtance of an Inch from it, on each Side.

From all this we ſee, not only that the Thorax is divided into two Cavities, entirely ſeparated from each other, by a middle Septum without any Communication; but, alſo, that, by the Obliquity of this Partition, the Right Cavity is greater than the Left; and hence we may judge of the Uncertainty of Trepanning

panning the Sternum, which the Antients have recommended in ſome Caſes.

The cellular Portion of the Pleura connects the membranous Portion to the Sternum, Ribs, and Muſcles; to the Diaphragm, Pericardium, Thymus, and Veſſels; and, in a Word, to whatever lies near the convex Side of the membranous Portions of the Pleura. It, likewiſe, inſinuates itſelf between the Laminæ of the Duplicature, of which the Mediaſtinum is formed, and unites them together. It even penetrates the Muſcles, and communicates with the cellular Subſtance in their Interſtices, all the Way to the Membrana Adipoſa on the external convex Side of the Thorax. In this the Pleura reſembles the Peritonæum.

The Surface of the Pleura, turned to the Cavities of the Breaſt, is continually moiſten'd by a lymphatic Seroſity, which ouſes through the Pores of the membranous Portion. This Fluid is ſaid to be ſecreted by imperceptible Glands; but the Exiſtence of theſe Glands has not been hitherto demonſtrated.

The Arteries and Veins of the Pleura are principally Ramifications of the Intercoſtals; and theſe Ramifications are exceedingly numerous, and, for the moſt part, very ſmall. The Mammariæ Internæ and Diaphragmaticæ, likewiſe, ſend Branches hither, which communicate very frequently with thoſe that come from the Intercoſtals.

The Mediaſtinum has particular Veſſels called the *Arteriæ* and *Venæ Mediaſtinæ*, which are commonly Branches of the Subclaviæ. The Mammariæ Internæ ſend, likewiſe, Ramifications to the fore Part of it, the Diaphragmaticæ to the lower Part, and the Intercoſtales and Œſophagææ to the back Part.

The Nerves are Ramifications of the true Intercoſtales, call'd otherwiſe *Coſtales*, and *Dorſales*. Near the Vertebræ, they communicate with the great Sympathetic Nerves, improperly called *Intercoſtales*, and but very little with the middle Sympathetici, or thoſe of the Eighth Pair.

The Pleura ſerves in general for an inner Integument to the Cavity of the Thorax. The Mediaſtinum cuts off all Communication between the two Cavities, and hinders one Lung from preſſing on the other, when we lie on one Side. It, likewiſe, forms Receptacles for the Heart, Pericardium, and Œſophagus; and is continued over the Lungs.

Before we leave the Pleura, it muſt be obſerved, that theſe Portions of it which adhere immediately to the Ribs, may be looked upon as the Perioſteum of their inner Sides. This Adheſion keeps the Pleura ſtretched, and hinders it from ſlipping or giving way. It, alſo, renders this Membrane extremely ſenſible of the leaſt Separation cauſed by a coagulated Lymph, or accumulated Blood; the nervous Filaments being, likewiſe, in this Caſe, very much compreſſed in Inſpiration, by the Swelling of the Intercoſtal Muſcles. *Winſlow's Anatomy.*

PLEURITIS, πλευρῖτις, from πλευρὰ, the PLEURA. A Pleuriſy, or Inflammation of the PLEURA. See PERIPNEUMONIA.

PLEURON, πλευρόν. The ſame as PLEURA.

PLEUROPNEUMONIA. The Name of a Diſtemper, conſiſting of a Complication of a Pleuriſy, and Peripneumony.

PLEURORTHOPNŒA, according to *Blancard*, is a Pleuriſy, in which the Patient cannot breathe without keeping his Neck erect.

PLEXUS, in Anatomy, is a kind of Net-work, or Complication of Veſſels. Thus a Congeries of Veſſels within the Brain is call'd *Plexus Choroides*, *Reticularis*, or *Retiformis*. A *Plexus* of Nerves is an Union of two or more Nerves, forming a ſort of Ganglion, or Knot.

PLICA POLONICA. In *Poland* and *Lithuania*, this Diſorder is endemial, and well known. It conſiſts in a preternatural Bulk of the Hairs, which, being firmly conglutinated and wrapped up in inextricable Knots, afford a very monſtrous and unſeemly Spectacle. When theſe are cut, the Blood is diſcharged from them, the Head racked with Pain, the Sight impaired, and the Patient's Life frequently endangered. This Misfortune is principally incident to the *Jews* who live in thoſe Countries. Though it ſeems difficult to account for this Diſorder, and aſſign its true Cauſes, we ſhall, nevertheleſs, make an Attempt of this Kind. What, therefore, contributes not a little to its Production, is the ſordid and naſty manner of Life to which theſe People are addicted; for they rarely comb their Hairs, ſleep in low, moiſt Rooms, and drink large Quantities of Brandy. The Waters, alſo, concur and aſſiſt in the Generation of this Diſorder. Hence *Gebema*, in *Epiſt. ad Bontekoe de Plica Polonica*, is juſtly of Opinion, that the Cauſes of this Diſeaſe is lodged in ſome particular Waters of *Poland*, which, if either drank, or uſed for waſhing the Body, produce the *Plica*; which he confirms by the Fate of two Soldiers, who, when intending to waſh their Bodies, had ſcarce immerſed their Heads in the Water of a certain Pond, before their Hairs were contracted into many Folds. Beſides theſe Cauſes, we ſuppoſe an hereditary Fault convey'd from the Parents, and which conſiſts in too great a Bulk of the Pores and bulbous Hairs under the Skin of the Head. Hence the thick and glutinous nutritious Juice, produced by their coarſe Aliments, and impure Waters, is, by the Heat excited by their drinking Brandy, forced into the Cavities of the Hairs, and, ſweating through their Pores, produces this terrible Diſorder. *Hoffman. de Morb. cert. Reg. propr.*

This Diſorder, unleſs the peccant Matter is convey'd to the Hairs, is very dangerous; and violent Symptoms are produced in almoſt all the Parts of the Body, where it is depoſited and lodged.

But if Nature, in a ſalutary and critical manner, throws the peccant Matter to the Hairs, an unſeemly Twiſting of them is produced, whilſt the Patient remains free from every other Symptom; ſince Nature generally throws the Remains of the peccant Matter to the Hairs, the Diſorder of which is, by many, ſupported to the Ends of their Lives, without any inconſiderable Inconvenience.

If the folded or twiſted Hairs are raſhly cut off, Blindneſs, and other terrible Symptoms, are excited, not becauſe, as ſome think, the Head is by this means expoſed to Cold, which might be prevented by wearing a Cap; but becauſe the Subſtance, in which Nature uſed to lodge the peccant Matter, is removed, and a free Evacuation of the ſordid Humours by that means prevented. And in this Diſorder the ſame happens as in old Ulcers, which, unleſs the Body is firſt well cleanſed, cannot be healed up without the greateſt Danger. Nor is it ſafe to cloſe Fontanels, which have been kept open for a conſiderable time.

When the peccant Matter is no longer lodged in the Body, the Plicæ, or Twiſtings of the Hair, are ſpontaneouſly removed; and if we are abſolutely certain, that ſuch a Matter is no longer in the Body, which, however, is hard to be known, the Plicæ, or Twiſtings, may be cut off.

A perfect Method of curing this Diſorder is, in my Opinion, unknown; undoubtedly, becauſe in thoſe Parts of *Poland* in which this Diſeaſe is endemial, there have been few Phyſicians, who, from what is commonly known of the Nature and Cure of the *Plica Polonica*, have been able to lay down a rational and judicious Plan for treating it.

'Tis certain, that Purging and Veneſection are ſo far from being beneficial in this Diſorder, that they often prove hurtful. Thus the Rector of the Academy of *Zamoſca* informs the Phyſicians of *Padua*, that, if they attempt the Cure of this Diſorder by common Purgatives, the Patient will be render'd worſe, becauſe theſe, inſtead of correcting and ſubduing the peccant Humours, throw them into violent Commotions, and more effectually diſtribute them through the whole Body; in conſequence of which, intenſe Pains are produced in all its Members. *Hercules Saxonia* is of the ſame Opinion, and confirms this Doctrine by various Inſtances of Perſons rendered blind, lame, and ſubjected to other Misfortunes, by uſing Purgatives in the Beginning of the *Plica Polonica*, as, alſo, in the Scurvy.

'Tis, therefore, moſt ſafe and expedient, as ſoon as poſſible, to ſolicit the peccant Matter to the Hairs, to which it naturally tends. And this Intention, as we learn from Experience, is, of all others, the moſt effectually anſwered by Lotions prepared of Bears-breech. *Sennertus.*

PLICHAS, πλιχάς. The ſame as PLECHAS.

PLINIA.

The Characters are;

It hath a Bell-ſhaped Flower, conſiſting of one Leaf, which is divided into five Segments at the Margin; from whoſe Cup riſes the Pointal, which afterward becomes a globular, ſoft, chaneled Fruit, in which is included one Seed of the ſame Form.

Miller mentions but one Sort of *Plinia*; which is,

Plinia fructu croceo odorato. *Plum. Nov. Gen.*

This Plant was diſcovered by Father *Plumier*, in the *Weſt Indies*, who gave it this Name, in Honour to *Pliny* the famous Natural Hiſtorian. *Miller's Dict.*

PLINTHIUM, πλινθίον. A Name of ſeveral Machines for making Extenſion. One of theſe is deſcribed by *Oribaſius*, *de Laqueis*, *Cap.* 13. He, alſo, deſcribes two more, in his Treatiſe *de Machinamentis*, *Cap.* 8. one of which he calls *Nilei Plinthium.*

PLINTHITIS, πλινθῖτις. A Species of Alum, called, alſo, PLACITIS.

PLOTES. A Name for the *Mugil*, in *Oribaſius*, *Collect. Medicinal. Lib.* 2. *Cap.* 58.

PLUMACEOLUS. A Pledget, Bolſter, or Compreſs.

PLUMACEUS. An Epithet for certain Magiſteries in *Zwelfer*, importing their being extremely fine, and ſoft as Feathers, or Down.

PLUMBAGO.

The Characters are;

The Root is fibrous, thick, fleſhy, hot, and perennial; the

Leaves

Leaves are alternate and entire. The End of the ſhort Pedicle unfolds itſelf into a monophyllous, quinquefid, and very hairy Calyx, ſhaped like a Tube, in whoſe Centre is ſeated the Ovary furniſhed with its proper Tube. On the Apex of the Ovary, grows a monopetalous Flower, conſiſting of a long Tube, which has its upper Part expanded into a Circle, ſo as to reſemble the Flower of Jeſſamin; theſe Flowers are diſpoſed in Spikes. The Seed is oblong and acuminated.

Boerhaave mentions two Species of *Plumbago*; which are,

1. Plumbago quorumdam. *Tourn. Inſt.* 140. *Boerh. Ind. A.* 77. *Dentellaria.* Offic. *Plumbago Plinii.* Ger. 1069. Emac. 1254. Raii Hiſt. 1. 394. *Dentellaria Rondeletii.* J. B. 2. 941. *Lepidium Dentellaria dictum.* C. B. P. 97. *Lepidium Monſpeliacum Dentellaria dictum.* Park. Theat. 885. LEADWORT.

The Stalks of this Leadwort are but weak and ſlender, clothed with long, narrow, whitiſh, green Leaves, which encompaſs them. The Flowers grow in ſhort thick Spikes, ſmall and purple, of a ſingle Leaf cut into five Segments, which are ſucceeded by rough, hairy, naked, ſolitary Seeds. The Root is large and thick, and the whole Plant is hot and biting, like Lepidium.

This is a Plant ſeldom or never uſed. It is of an hot, and even a cauſtic Nature, like Pellitory of *Spain*; and has been made uſe of, like that, for the Tooth-ach; it is ſaid, that, even held in the Hand, it will cure the Pain of the Teeth. *Miller's Bot. Off.*

2. Plumbago Ceylanenſis, folio ſplendente Ocymaſtri, flore lacteo.

PLUMBAGO. *Plumbage.* The ſame as MOLYBDÆNA.

PLUMBUM. Lead.

The *Greek* Authors frequently uſe the ſame Name to expreſs both Lead and Tin; and, accordingly, their *Latin* Tranſlators interpret κασσιτερος, both by Plumbum and Stannum. *Geo. Agricola* mentions three Kinds of Plumbum, one white, which we call *Tin*; another of an Aſh-colour, which we call *Biſmuth*; and the third livid, which is our Lead.

THE FORMS OF ITS ORE.

Lead is ſeldom found pure in the Mines, and has different-coloured Ores, *viz.* black, yellow, and aſh-coloured; it is, alſo, found in red, or white rocky Stone, and ſometimes in the Form of Dice, with ſhining Lead-coloured Surfaces; and, ſometimes mixed with white, yellow, or green Fluors. There are many Lead Mines in *Spain*, *Italy*, and *Germany*; but the richeſt are thoſe of *England*.

The Ore is of a poiſonous Quality, eſpecially with regard to Brutes. "They who live near where it is waſhed, ſays "Mr. *Beaumont*, can neither keep Dog nor Cat, nor any "Sort of Fowl, but they all die in a ſhort time." He adds, that, "not only Calves, but even Children, have been known "to be kill'd, by only being in Houſes where Lead-ore had "been kept ſome time; and that if any Sort of Cattle fed "often on the Graſs, on which the Steam which riſes from "the Smelting of Lead, falls, they all die ſoon after." *Phil. Collect.*

DIFFERENCES OF ITS ORE.

There is a very conſiderable Difference between the Ores of different Mines. Some is ſo like Steel, that the Workmen call it Steel-ore; which being of more difficult Fuſion than ordinary, they mix other Ore with it. There is another, which, from its Readineſs to vitrify, and its Uſe in glazing the Potters Veſſels, is called *Potter's Ore.*

Our *Engliſh* Lead-ores are reducible to three Claſſes; the firſt, thoſe which, in the ordinary ways of Melting, afford from thirty to forty Pounds of Metal, for every hundred Weight of Ore. The ſecond, from forty-five to ſixty. The third, from ſixty to eighty.

LEAD CONTAINS SILVER.

The Lead found in ſome Parts of *England*, contains from five to ten Pounds of Silver in a Tun Weight; which they get out by teſting, and recover the Lead without any great Waſte.

The Lead of many Mines, being ſkilfully treated, affords Silver; but the Quantity of Silver in the Ore, does not hold in Proportion to the Quantity of Lead. Mr. *Boyle* cauſed ſome Lead-ore to be tried, which, being the moſt promiſing he had ever known, gave him Hopes of ſome conſiderable Quantity of Silver: But though it proved ſo rich in Lead, as to afford after the Rate of ſeventy Pounds to the Hundred; yet one of the moſt expert Artiſts in *Europe* could not extract one Grain of Silver from it. Yet a Piece of Lead-ore was brought from *Ireland*, which ſeemed ſo light in the Lump, that he thought it ſcarce deſerved to be wrought for Lead; which, however, was found upon Trial, ſo well ſtored with Particles of Silver, that he encouraged the Owner of the Mine to work it.

HOW SMELTED.

Some Lead-ore requires no previous Preparation to its being ſmelted, unleſs by grinding. They barely throw it upon a Wood-fire, or a Forge-hearth, where the Metal running into a Baſon in the Hearth, they ladle it out, and caſt it into an iron Mould, which gives it the Form of what we call *Pigs*.

In the Lead-works at *Mendip*, in *Somerſetſhire*, the Method of procuring the Metal is thus delivered by Mr. *Glanvil*, in *Phil. Tranſact.* No. 39. "When they have got the Ore they "beat it ſmall, then waſh it clean in a running Stream, and "then ſift it in iron Rudders. They next make an Hearth, or "Furnace, of Clay, or Fire-ſtone; and therein build their "Fire, which they light with Charcoal, and keep up with "young oaken Gads, blown with Bellows. After the Fire is "lighted, and the Fire-place hot, they throw the Lead-ore "on the Wood, which melts down into the Furnace; and, "then with an iron Ladle they take it out, and caſt it in "Sand into any Form they pleaſe."

Lead is the heavieſt Body, after Mercury. Hence melted Lead conſtitutes a Fluid of the third Order of Gravity; wherein *all Bodies, whether metalline or not, excepting Gold* and Mercury, might float, if there were no other Cauſe to the contrary.

If all the Impurities of Lead could be perfectly purged away, its Weight might nearly approach to that of Mercury. Accordingly, in analyſing this Metal, it is ſaid to yield a conſiderable Quantity of Mercury; though what the other Ingredient is, united with the Mercury, ſeems hard to ſay. Lead, though a cheap and common Metal, has yet a great Affinity with Gold, at leaſt in point of Weight, which ſeems to be the moſt diſtinguiſhing and immutable Character of Gold; and what makes the Reſemblance ſtill cloſer is, that Lead does not mix with any Metals, except thoſe allowed to be Mercurial ones.

Lead proves extremely ſimple in all Kinds of Trials.

It is not fixed, but fumes in the Fire; and, after continuing long in Fuſion, penetrates moſt of the Veſſels hitherto uſed.

It is the ſofteſt of all Metals, eaſily ductile, and the leaſt elaſtic or ſonorous. There is no Metal whoſe Figure is ſo eaſily changed; and hence it proves very ductile, and eaſily flexible, though not capable of being drawn out into ſuch ſimple, fine, coherent Parts, as Gold.

It diminiſhes the Sound of other Metals, when mixed with them. This Property follows from its Softneſs; for, if two equal leaden Balls be ſtruck with equal Velocities againſt each other, they will both remain fixed in the Point of Contact, without any Vibration or Reſilition; ſo that of courſe no Sound can be produced. 'Tis on account of this Unelaſticity of Lead, that it has been uſed by Dr. *Wallis*, Mr. *Huygens*, and others, for determining the Laws of Percuſſion. By this Property, alſo, Lead ſhould appear to be nearly allied to Gold, which is the next leaſt ſonorous or ſpringy of all Metals. Accordingly ſeveral Experiments have been produced, to prove that Lead, melted, always either contains, or generates, ſome Portion of Gold. M. *Homberg* aſſures us, that taking a Quantity of Silver, and ſeparating it from all heterogeneous Matter by teſting with Lead, then putting a Piece of it in Aqua-fortis, a little Gold fell to the Bottom. And, upon adding Copper to the Aqua-fortis, the Silver was precipitated.

Lead melts the ſooneſt of all Metals, except Tin, even long before it ignites; and thus grows ſcurfy, readily vitrifies, and, being now fuſed, it paſſes through any Veſſel. A Quantity of Lead, being ſet over the Fire in an iron Ladle, no ſooner begins to run, than its Surface appears exceedingly bright, and ſhines like Mercury; but its Face ſoon alters, and you diſcern a Cloud in it, which gradually increaſes, till the whole Surface appears darkened with a duſty Scoria. This Duſt being blown away with Bellows, there ſtrait ariſes a new Supply; and ſo on till the whole Lead is thus converted into Scoriæ, which are only the Matter of the Lead gently calcined. A more violent Fire vitrifies them; that is, converts them into an heavy, brittle, pellucid, elaſtic, ſonorous Matter, called *Glaſs*; into which other Metals are indeed convertible, but Lead the eaſieſt; and which is of ſuch a penetrating Nature, that it runs through all the common Crucibles, almoſt as Water through a Sieve.

The Calx of Lead has nothing of the Appearance of Lead; and yet by only expoſing it to a ſtrong Fire, and adding a little Iron-filings, or any unctuous inflammable Matter, the Lead is eaſily recovered.

And if, while the Lead is in Fuſion, it be kept continually ſtirring with a Spatula, it turns into a red Powder, called *Minium*, or *Red-lead*; in which Operation this is farther obſervable, that the Lead augments in Weight.

Lead throws up light Bodies that are caſt into it; vitrifies with the baſer Metals; and, having ſo done, carries them along with

with it from the Cavity of the Teſt; thus leaving only Gold and Silver behind, ſeparated from the reſt. After Fuſion, it quickly returns, in the Cold, to a ſolid Maſs, though more ſlowly than Tin. Lead diſſipates all Metals teſted with it, on the Cupel, except Gold and Silver; which is a Property, that had we been unacquainted with, all our Treaſures of Gold and Silver had lain in little Compaſs; this being of principal Uſe in obtaining thoſe Metals.

The Foundation of the Proceſs is this: Any Maſs, of what Kind ſoever, whether Metal or Stone, Salt or Sulphur, Gold and Silver only excepted, being mixed with Lead, and expoſed to the Fire, ſeparates, and flies off.

Upon the Whole, there are three ways whereby all the Matters mixed with Gold and Silver are deſtroy'd and loſt, when cupel'd with Lead. 1. By volatilizing and evaporating. 2. By turning to Scoriæ, and retiring to the Sides of the Teſt. 3. By penetrating the Pores of the Cupel; which only happens to ſuch Bodies as can neither fly off in Fumes, nor work to the Sides in the way of Scoriæ.

Lead diſſolves in Aqua-fortis, not in Aqua-regia, and thus yields a ſweet Salt. It diſſolves in moſt of the weak Acids; but very difficultly in the ſtronger, unleſs they be diluted with Water. Thus in Aqua-fortis it diſſolves ſlowly; but very readily in Vinegar, ſmall Aqua-fortis, *Rheniſh* Wine, Spirit of Vinegar, and the like; and even in Oil of Vitriol well diluted with Water. Add, that, in whatever Acid it is diſſolved, the Solution becomes conſiderably ſweet like Sugar. The Fumes of Wine or Vinegar diſſolve it into a white Powder, or Calx, called *Ceruſs*, or white Lead.

It is found plentifully in various Mines of *Europe*; being cheap, and the Conſumption of it large: But 'tis in its Nature very ſurpriſing, and for certain Purpoſes exceedingly uſeful. In the fabulous way, it is called, the *Origin* and *Father*, as well as the *Devourer of other Metals*.

Its Ore is uſually ponderous and ſhining, of a Lead-colour, which yield half the Quantity of Metal. Sometimes it is white, red, or yellow, which are poorer Kinds: It often contains a little Silver, by which the Aſſayers, if not on their Guard, are liable to be deceived.

Its Medicinal Virtues.

Both in its crude State, and in all its Preparations, Lead ſeems to be cooling, thickening, repelling, abſorbing, and contracting, ſo as to retard the Circulation of the Blood, hinder all the Secretions, and hurt the Nerves, by cauſing Spaſms, Convulſions, Tremblings, Difficulty of Breathing, and Suffocation. Whence it appears unfit for internal Uſe in any large Doſe; and, accordingly, its medicinal Uſes are principally external.

Its other Uses.

Its Uſes in the Hands of the Plumber, Glazier, Shot-maker, white and Red-lead-maker, Potter, Aſſayer, Jeweller, Painter, and others, need not be mentioned, as being commonly known. A Mixture of it with Tin is the Foundation of enamelling; and counterfeit Gems are made by its means.

Hints for its Alchymical History.

Let the Saturnus Cornuus be examined for Mercurification.

What Veſſel will hold the Glaſs of Lead in Fuſion?

Let the talky Nature of Litharge be examined.

As Lead fulminates with Nitre, and flaſhes in the Flame of a Candle, and burns blue, it may ſeem to contain a Sulphur.

Is not the ſulphureous Principle in Lead ſmall in Quantity, and but looſely joined; ſince a ſmall Degree of Fire is able to ſeparate them?

Expoſed upon a Tile to the Focus of a Burning-glaſs, it fumes and turns to a yellow or red Calx; then melts into a yellow Fluid, which ſoon evaporates in Smoke; but, if removed before this happens, it hardens to a yellow Maſs like Orpiment, conſiſting of Laminæ like Talc. This being again expoſed to the Focus, on a Piece of Charcoal, recovers the Form of Lead. But if the Lead be laid upon Charcoal, it thus totally diſſipates in Fume, and leaves no Glaſs behind. Hence what Relation has it to Mercury, Gold, *&c.*?

Is it not compoſed of a ſoft, talky, vitrifiable Earth, and a ſmall Proportion of a Sulphur, or inflammable Subſtance, lightly joined therewith?

The Calx of Lead by the Vapour of Vinegar.

Take a large glaſs Body, cut ſo as to have a wide Mouth, with an Alembic-head anſwering to it; in this Head put thin Plates of Lead, ſo as to ſtand ſomewhat erect, without falling, all around the hollow Part of the Ledge; put Vinegar into the Body; ſet it in a Sand-heat, put on the Head with its Lead-plates, apply a Receiver, and diſtil with a gentle Fire for twelve Hours; then leave off, and let all cool for twelve Hours; the Plates, being now gently dried, grow white, or appear covered with a white Powder, which, being bruſhed off with a Hare's-foot, is called Ceruſs, or White-Lead. If the Operation be ſeveral times repeated, the whole Body of the Lead will be turned into the like perfectly, inſipid, ſcentleſs, white Powder; the Vapour of the Vinegar raiſed in the Operation condenſes into a whitiſh, turbid, ſweet, nauſeous, ſtyptic Liquor, called the Vinegar, or the Solution of Lead.

Remarks.

Hence we may ſee how eaſily Lead is diſſolved by a very mild Acid, and ſoon changed from its malleable State into a looſe Powder, or brittle ſcaly Plates; but the diſtilled Liquor, impregnated with diſſolved Lead, is a true Solution of Lead, which, being inſpiſſated, affords the true Salt of Lead. This Operation is continually made in Lead expoſed to the Air, that abounds with Acids; whence Coverings of Lead, that are expoſed to the Air, reſolve into a white Calx, and this the ſooner, the more the Air abounds with Acids. If the ſame Operation be performed upon Iron or Copper, theſe Metals, alſo, are diſſolved on their Surfaces; the Iron into a red Calx of Iron called Ruſt, and the Copper into a green Subſtance called Verdegriſe; the Iron into a gold-coloured Liquor, and the Copper into one that is perfectly green. The Ceruſs thus prepared is likewiſe compounded of the Acid of Vinegar, and the diſſolved Body of the Lead, but the Acid is here latent. This Ceruſs is of Uſe in watry, ulcerous, running Sores, or Diſeaſes of the Skin, being ſprinkled thereon. If this fine Powder be drawn along with the Breath into the Lungs, it cauſes a violent and almoſt incurable or mortal Aſthma: If received into the Mouth, and ſwallowed along with the Spittle, it occaſions inveterate Diſtempers in the Viſcera, intolerable Faintings, Weakneſs, Pains, Obſtructions, and at length Death itſelf. Theſe terrible Effects are daily ſeen among thoſe who do any Work in Lead, but principally among the Makers of White-lead. Let Men, therefore, beware of this Poiſon, which being both without Smell and Taſte, proves the more pernicious as it is the leſs diſcovered, and does not ſhew itſelf 'till it has deſtroyed the Body. Hence we learn alſo how eaſily Lead may be demetallized, and turned to a Calx; and this appears upon all Experiments. If Lead be melted over a gentle Fire, in a clean unglazed earthen Veſſel, it runs pure like clean Quickſilver, but ſoon grows dark upon its Surface, and gathers a Skin, which being carefully taken off with an iron Ladle, proves a kind of Calx: Now, again, the Surface appears white, and again generates a Skin, that may be taken off, 'till at length, the whole Body of the Lead is changed into this Calx, which alſo is poiſonous. This Calx, and the former Ceruſs, being long calcined, and ſtirred over the Fire, at length increaſe in Weight, and turn of a bright-red Colour; and the like is found in Lead-ore long calcined. In the Smelting of Copper, there riſes a Scum, which principally conſiſts of Lead; and, if of a Colour betwixt Red and Yellow, it is called Litharge of Gold; if paler, the Litharge of Silver; tho' both of them are nearly the ſame thing, and of the ſame Virtue. Lead-ore does not much differ from the former. Hence the ſame Lead may exiſt under various Colours, Gravities, Maſſes, and Forms, and may be diſſolved in the ſame Liquors, and thus afford the ſame Productions; nor is it of much Significance, whether Ceruſs, Litharge, Red-lead, or Lead-ore be thus corroded by Vinegar; for in each Caſe the ſame Salt of Lead is produced; they have all of them the ſame medicinal drying Virtue, and poiſonous Quality. Red-lead gains conſiderably in Weight from the Fire; this may, perhaps, proceed from the Acid of the Fewel, imbibed by the Lead from the Fire.

The Vinegar of Lead.

1. Boil Ceruſs in a tall Bolt-head, with twenty times its Weight of ſtrong diſtilled Vinegar, in a little wooden Furnace, often ſhaking the Veſſel for four Hours; then let all cool, ſtrain off the pure Liquor, add more diſtilled Vinegar to the Remainder, repeat the Operation as before, and continue thus, till the Ceruſs is almoſt diſſolved: Mix the ſeveral Solutions together, they will be found to have loſt the Sharpneſs of the Vinegar, and to have become ſweet, nauſeous, and ſtyptic. This is called the Vinegar of Lead, as alſo Virgins Milk, becauſe it cures red Spots, Pimples, and little Ulcers in the Face. If this Vinegar be filtred, and diſtilled with a gentle Fire to a Fourth, there comes over a nauſeous Water, that is not acid, but of a diſagreeable and particular Odour. All the Acid of the Vinegar is retained below, in the reſolved Ceruſs. Let it be preſerved under the Title of Vinegar of Lead, and it is to be eſteemed of the ſame Virtue with Vinegar of Litharge.

2. If inſtead of Ceruſs we take the Litharge of Gold, or Silver, Red-lead, or Lead-ore, reduce them to Powder, and boil them with Vinegar as above, they will afford the ſame undiſtinguiſhable Vinegar of Lead. This only is particular of it, that, when cold, it filtres with Difficulty, as then blocking up the Paper; but, when hot it runs through eaſier.

3. When freſh-diſtilled Vinegar is pour'd to this inſpiſſated Solution, and boiled, and again reduced almoſt to the Conſiſtence of Honey, the Vinegar diſtilled off loſes much of its acid Virtue, leaving the acid Part in the metallic Liquor; the Part that

floats above, being ſomewhat oily, unctuous, and ſaccharine, is called Oil of Lead, and conſiſts of the Metal and the Vinegar. The oftener this Addition of Vinegar is repeated, the more unctuous the Liquor becomes, and the harder to dry.

REMARKS.

Hence we have a new Method of calcining and diſſolving a very ponderous Metal, and bringing it into a Liquor. Here we ſee a new Taſte and Odour produced, by Acid and Metal; and an Attraction and Separation of the Acid by the Metal, till it is fully ſaturated and impregnated. This Vinegar of Lead long preſerves uncorrupted the Bodies of Animals that are plunged therein, or penetrated and dried therewith; it coagulates the animal Juices, and preſerves them from Putrefaction; if diluted and rubbed upon the Skin, it cures Breakings out, Redneſs, Inflammations, and the Eryſipelas; it gives a Whiteneſs and Beauty to the Skin, but proves pernicious to the Body; at length occaſioning a Conſumption, as appears by many melancholy Examples. If the inſpiſſated Oil of Lead be mixed with an equal Quantity of Oil of Roſes, it makes a white Balſam highly commended by the Surgeons.

THE SALT OF LEAD WITH VINEGAR.

1. Inſpiſſate a Quantity of the Vinegar of Lead in a low glaſs Body, with a very wide Mouth, till it becomes almoſt as thick as Oil; ſet it in a quiet cold Place, and a whitiſh-grey Maſs will ſhoot to the Bottom, in ſmall erect Spiculæ; pour off all the Liquor, and with a gentle Fire ſlowly dry the Remainder; which will now be white like Sugar, and is called the Sugar of Lead.

2. Diſſolve this Sugar of Lead in freſh and ſharp diſtilled Vinegar; let it ſtand to depurate; inſpiſſate the Liquor to the Thickneſs of Oil; ſet it in a cold quiet Place, and there will ſhoot at the Bottom thick ſolid Cryſtals, perfectly reſembling the Form of vegetable Candy-ſugar, and having nearly the ſame Taſte.

3. If theſe Cryſtals be again diſſolved in freſh-diſtilled Vinegar, and the Solution be depurated by ſtanding, then inſpiſſated by a ſoft Fire to the Thickneſs of Oil, a Liquor will be obtained which can hardly be dried, and rendered hard by a ſmall Fire; but it remains ſomewhat fixed, and may be liquified like Wax, with a gentle Heat. The oftener this Impregnation is repeated with freſh Vinegar, and the Matter dried, the more fixed it becomes in a ſmall Fire, ſo as not to ſmoke, but eaſily run. If now it be committed to a moderate Heat, and afterwards ſuffered to cool, but, while it remains fluid, it be poured into another cold Veſſel in the cold Air, it ſtrongly coagulates in the pouring, and concretes into fine Threads, like Cobwebs, perfectly reſembling ſilver Thread, and affording a very agreeable Sight. This was publiſhed as a Secret by a Jeſuit, though ſomewhat diſguiſed in the Delivery.

4. As ſoon as this Body, coagulated into Threads, is expoſed to a greater Heat, it preſently runs again, ſo that it may be again poured out. And if this Reſolution and Inſpiſſation be carefully and patiently repeated, each time ſeparating the Fæces, and then, if the Matter be long, digeſted with a gentle Heat, till it grows thick, and concretes, a Maſs is at length formed, which to the unwary Eye reſembles Silver. *Iſaac Hollandus* deſerves to be read on this Subject, where he ſpeaks concerning the Stone from Lead. The Proceſs, alſo, may be continued at Pleaſure, by thoſe who deſire to ſee unuſual Appearances of Bodies.

REMARKS.

The Production is called the Sugar, Salt, Magiſtery, or Vitriol of Lead. It ſhews how a fermented vegetable Acid may be combined with Lead, into a Subſtance ſoluble in Water. It is aſtringent, ſtyptic, and preſently coagulates the Blood. Being diſſolved in Water, it affords the Vinegar of Litharge, good againſt Inflammations, when externally uſed. Internally, it is recommended for a ſafe Remedy againſt Spitting of Blood, Bleeding at the Noſe, making bloody Urine, the Gonorrhœa, the Fluor Albus, and the like, as, alſo, for a mollifying Remedy againſt the Acrimony of the Blood; but I never durſt make Trial of it, becauſe I never ſaw it ſucceſsfully uſed by others; and becauſe there is ſcarce a more deceitful and deſtructive Poiſon than this Lead, which preſently returns to Ceruſs, as ſoon as the Acid is abſorbed from it, by any thing it may meet with; whence it afterwards proves an exceeding dangerous and almoſt incurable Poiſon to the Body. If the Salt of Lead be gradually diſtilled in a Retort, and at length urged with a violent Fire, there comes over a flat inflammable Spirit, perfectly changed from the Nature of the Vinegar employ'd; and there remains at the Bottom a Subſtance like Glaſs, which, when urged by a ſtrong Fire, penetrates almoſt all the Veſſels that are known, vitrifying all Bodies, and carrying them through with it, except Gold and Silver.

THE SALT OF LEAD WITH SPIRIT OF NITRE.

1. Put an Ounce of granulated Lead, Ceruſs, Litharge of Red-lead, into a tall Bolt-head; pour thereon fifteen Ounces of

Spirit of Nitre, or Aqua-fortis, diluted with ten times their Weight of Water; there ariſes a great Ebullition with a white Froth; which being over, ſet the Glaſs in a little wooden Furnace, to boil for five or ſix Hours. Let the Liquor reſt and cool, then filtre it, and diſtil to a Pellicule; a nauſeous, but not acid, Water will come over. Put the remaining Liquor in a cold Place, and there will ſhoot white, ſolid, and very ponderous Cryſtals, that do not run in the Air, but continue ſolid; they are of a ſweetiſh Taſte, and more auſtere than thoſe of the preceding Proceſs; the Liquor, alſo, after the Solution, or both before and after the Cryſtallization, has a ſaccharine Sweetneſs like the Salt. 2. If freſh Aqua-fortis be poured to this Salt, ſo as to diſſolve it, and the Liquor be again inſpiſſated, an Oil of Lead may thus, alſo, be prepared, which coagulates with Difficulty, but gradually fixes, ſo as to run like Wax, with a gentle Heat. 3. This Salt, being dried, and thrown upon live Coals, does not take Flame, but crackles violently in the Fire, and flies all around, with great Danger to the By-ſtanders; but, if red, uſed to fine Powder, it may be melted in a ſtrong Fire.

REMARKS.

Hence we have a new Method of producing a metallic Salt, and its Oil; a ſweet Taſte from an acid and an inſipid Body; a Glaſs from a Metal; and of ſhewing, that Spirit of Nitre will not make an inflammable Salt with every Metal, as it does with Silver. The Salt here has the ſame Virtues as that of the preceding Proceſs, but it is more ſharp and aſtringent.

THE SALT OF LEAD TREATED WITH ALCALIES.

To two Ounces of the cryſtalline Salt of Lead, made according to either of the two laſt Proceſſes, thoroughly dried and reduced to fine Powder, add four Ounces of Oil of Tartar per Deliquium; ſet them in Digeſtion, where the longer they ſtand, the better; then add an Ounce of Sal Ammoniac; mix them well, and digeſt again in a cloſe Veſſel; pour back the ſaline Liquor that comes over in the Digeſtion, and digeſt again; which being twice or thrice repeated, dry the Matter thoroughly by a gentle Fire, and expoſe it to a moiſt Air, that it may diſſolve; dry it again, and diſtil it in a coated glaſs Retort, with Degrees of Fire to the higheſt that Sand will give, into a large Receiver containing a little fair Water. Three Kinds of Matter will thus come over, which ſeems ſurpriſing, while another of a particular Nature, and ſtrangely changed, remains at the Bottom of the Retort.

REMARKS.

Many very paricular Things are learned from this Experiment, and ſuch as are pleaſant to behold; for the Metal thus ſucceſſively opened, and diſſolved by oppoſite Salts, then coagulated, and diſſolved in the Air, is highly changed, opened, ſubtilized, divided, and ſeparated from all that is not purely Mercurial, or metallic; and may thus exhibit its pure, metallic, Mercurial Part, ſeparated from the reſt, if the Induſtry of the Operator can reach ſo far.

THE CALX OF THE VITRIOL OF LEAD.

Take the Vitriol of Lead, made according to the two laſt Proceſſes but one; dry it thoroughly with a gentle Fire, grind it to fine Powder; put into a glazed earthen Diſh; ſet it over the Fire, and keep it continually ſtirring with a Tobacco-pipe, till it yields no more Fumes with a great Heat; a fine and almoſt inſipid Powder will thus be obtained, which is another Calx of Lead, made in the moiſt Way.

REMARKS.

All the Acid which was united with the Lead, in the Form of the Vitriol of Lead, is here again ſeparated from it by the Fire, except that Part, which, intimately adhering thereto, does not appear externally, and was therefore much more cloſely united with it in this Operation.

THE BALSAM OF LEAD WITH EXPRESSED VEGETABLE OILS.

1. Put granulated Lead, any Calx thereof, Ceruſs, Litharge or Red-lead, into a glazed earthen Veſſel; add to it twice its Weight of any expreſſed Oil; then gradually raiſe the Fire, and the Lead will begin to melt at the Bottom, before the Oil boils; but if the Fire be gradually increaſed, ſo as to make the Lead boil, the Body of the Lead, or Calx, will begin to diſappear, and mix ſo intimately with the Oil, as to make a true Balſam, which, by longer boiling, may be brought to a Subſtance that is ſolid in the Cold, ſemi-metallic, will melt in the Fire, and is ductile. 2. If inſtead of Lead or its Calx, we uſe that Calx prepared in the laſt Proceſs, or the Salt of Lead, firſt dried, and treat it with expreſſed Oil, in the Manner above delivered, the like Balſam will be obtained as from the true Metal, and the Oil.

REMARKS.

REMARKS.

Hence we ſee, that true and very ponderous Metals may, by the means of Fire, be diſſolved in vegetable Sulphur, and ſo mixed, as to lie perfectly concealed therein: Whence we are often ignorant, whether Metals are concealed in certain Bodies or not; how wonderfully they may be diſguiſed; and how often they may proceed from Matters not thought to contain them, when they have been often falſely ſuppoſed to be obtained from them by Tranſmutation. All theſe Particulars admoniſh us to be cautious of the Impoſitions of the fraudulent Alchemiſts. Theſe emplaſtic Preparations of Lead are of Uſe to ſtrengthen and warm the Parts, whereto they are applied; they, alſo, diſcuſs, mollify, and abſorb acrimonious Humours; in particular, they are excellent for lining Veſſels deſigned to contain Water; for if Red-lead be boiled in Oil to a proper Thickneſs, and be exactly ſpread over a Stone Wall made almoſt red-hot, ſo as intimately to penetrate and ſtick therein, it will cauſe the Wall to reſiſt Water, as well as if it was built with Cement. This Mixture we uſe to prevent Worm-tubs from leaking.

THE BALSAM OF LEAD WITH DISTILLED VEGETABLE OIL.

Gently dry the Sugar of Lead, prepared according to the third of theſe Proceſſes; put it into a tall Bolt-head, and add to it four times its Weight of the ethereal Oil of Turpentine; boil it for ſome time; which is eaſily done, if the Glaſs with this Mixture be put into a Veſſel, in which Linſeed-oil grows juſt hot enough for the Purpoſe, which happens long before Linſeed-oil of it ſelf will boil: Thus the Oil of Turpentine will almoſt wholly diſſolve the Sugar of Lead, whereby the Balſam is obtained.

REMARK.

This Proceſs has the ſame Uſe with the former.

THE GLASS OF LEAD.

1. Mix two Parts of Red-lead, with one of clean Sand, reduced to fine Powder, by grinding them long together; then put them into a clean Crucible; ſet it in the Fire, ſo that the Matter may melt, and continue in Fuſion for ſome time, till, when examined by dipping a Tobacco-pipe therein, what ſticks thereto appears tranſparent; then pour it out upon a Marble: A brittle, yellow, tranſparent, inodorous, inſipid Maſs will be thus obtained, that proves hard in the Cold, and melts in the Fire; whence it is called Glaſs of Lead. This Matter, when fuſed in the Fire, paſſes through all the known Veſſels, as Water through a Sponge; and converts almoſt all Bodies into Glaſs, with itſelf in Fuſion, carrying them through the Pores of the Veſſels, except Gold and Silver. In order to make the Mixture of the Red-lead and Sand run ſooner into Glaſs, ſome add Nitre, and others Sea-ſalt, and keep the Crucible in the Fire till the Salt is melted. 2. If the Sugar of Lead be put into a Crucible, and urged with a gentle Fire, ſucceſſively increaſed, the Vinegar flies off, and the Matter is ſo changed, as to run into a yellow Glaſs, at the ſame time that wonderful pleaſing Colours appear in the middle, like thoſe of the Rainbow, or the Peacock's Tail. 3. If Lead itſelf be long kept melted in the Fire, it becomes droſſy at Top, which increaſes till the Lead is almoſt wholly converted into the ſame kind of Matter; and this, being again urged with a ſtrong Fire, turns of itſelf into Glaſs; but this is a laborious Operation, and requires much Caution. The eaſieſt Method appears to be the following. 4. Take four Parts of Red-lead, one Part of Sand, and two Parts of dry decrepitated Sea-ſalt; grind them together, the longer the better; put them into a cloſe-covered Crucible; melt them together, and ſuffer the Whole to Reſt; the Salt will be found melted in a Glebe at Top, and the Glaſs below, when the Crucible is broke, and ſhould be ſeparated from the reſt, for the Purpoſes of Metallurgy, where it is extremely uſeful. 5. Theſe Glaſſes, being mixed with a little powdered Charcoal, and melted in the Fire, eaſily turn to Lead again.

REMARKS.

We have a wonderful Change of this Metal (by means of Fire and the Diſcharge of a metallic highly poiſonous Vapour) from a perfectly malleable State, to an extremely brittle, and true glaſſy Matter. Whence we ſee how wonderfully, and under what various Forms, Metals may lie concealed, and how eaſily they may again appear. And hence, perhaps, Metals vitrify in the Fire, after being ſeparated from a certain ſulphureous Part. This ſeems to appear from the making of the Glaſs of Antimony, and other Experiments. And, upon reſtoring this Sulphur, the metallic Form begins to return, as may be ſeen in many Inſtances, eſpecially in Lead. This Glaſs of Lead is the true Teſt of Metals, and deſtroys every thing in the Fire, except Gold and Silver, which it leaves untouched, without any Diminution of their Weight. And upon this Foundation depends the whole Art of Aſſaying and Refining, which is of ſo great Uſe in Civil Affairs. Whoever would know more of the Subject, may conſult *Boyle*, *Bohn*, *Homberg*, and *Geoffroy*. But let it be carefully remember'd, that the Fume, the Powder, and all the Parts of Lead are carefully to be avoided, as highly poiſonous. *Boerhaave's Chymiſtry.*

The burning Spirit and Oil of Lead are obtained from the Sugar or Salt by Diſtillation; but the Virtues of theſe inflammable Subſtances are the ſame with thoſe of Spirit of Wine, whatever Chymiſts may pretend to the contrary; for the Spirit is only the Spirit of Wine, concentrated in the Vinegar diſengaged by this Preparation, and the red Oil is likewiſe extracted from the Vinegar.

The mineral Mummy of Lead of *Poterius* is the Calx of Lead and Quickſilver amalgamated together, made in this manner:

Take of Mercury revivified from Cinnabar, two Parts; and one Part of Lead. Amalgamate them together, and continue to ſhake them ſtrongly in an earthen Veſſel over a Charcoal-fire, till the Whole be reduced to a black Powder. Bake this Powder in a Sand-heat, in a glaſs Matraſs, till it turns yellow; and keep it for Uſe.

This Mummy cures, in a very ſmall time, the Itch, Tetters, and other Diſeaſes of the Skin, cleanſes callous Ulcers, and diſſolves the Callus, and diſſipates Swellings in the Glands of the Breaſts, being mixed in any Ointment or Plaiſter. It is, likewiſe, of Service in Cancers, which are not arrived at their laſt Stage. It muſt, however, be cautiouſly and ſparingly uſed, leſt the Suppuration prove too great. But, if a Carcinoma, for Inſtance, be not ulcerated, a Dram of this Mummy, accurately mixed with an Ounce of Emplaſtrum Magneticum of *Angelus Sala*, and applied to the Tumor, will gradually diſſolve it. But, if there be an Ulceration, then a ſmall Pencil of Lint dipped either in the Mummy alone, or mixed with Powder of Myrrh, is to be thruſt into the Ulcer, the Emplaſtrum Magneticum being applied upon it. By this means the hard Tumor gradually reſolves by a gentle Suppuration; and, by proper internal Remedies uſed at the ſame time, the Carcinoma is healed. *Geoffroy.*

PLUMIERIA.

The Characters are;

It has the Appearance of the *Apocynum*, and abounds with a lacteous Juice. The End of the Pedicle paſſes into a little ſhort monophyllous Calyx, out of which grows the Flower, as in the *Nerium*, but wants the petaloid Crown. The Ovary, which grows in the Bottom of the Calyx, becomes a long, ſiliquous, double Fruit, when opening lengthwiſe, and pregnant with a Multitude of Seeds, placed as in the *Apocynum*, but foliated.

Boerhaave mentions but one Sort of *Plumieria*; which is,

Plumieria; flore roſeo, odoratiſſimo. *T.* 659. *Boerh. Ind. alt. Plant.*

Beſides the foregoing Sort of *Plumieria*, *Miller* mentions the five following;

1. Plumieria flore majore odorato & incarnato.
2. Plumieria flore niveo, foliis longis anguſtis & acuminatis. *Inſt. R. H.*
3. Plumieria flore niveo, foliis brevioribus & obtuſis. *Inſt. R. H.*
4. Plumieria foliis longiſſimis, minus ſucculentibus, flore pallido. *Houſt.*
5. Plumieria folio latiore obtuſo, flore luteo minore.

This Name was given to this beautiful Species of Plants, by Dr. *Tournefort*, in Honour to Father *Plumier*, who was Botaniſt to the late King of *France*, and a long time in *America*, ſearching after new Plants; and who has publiſhed a Catalogue of the Plants, with the new Genuſes he conſtituted; and two Volumes in Folio, with Figures and Deſcriptions of many of the Plants.

Theſe Plants grow wild in the *Spaniſh Weſt Indies*, from whence ſome of the moſt beautiful Kinds were brought into the *Engliſh* Settlements in *America*, and are cultivated in their Gardens for Ornament. The firſt Sort here mentioned is the moſt common Kind, which is preſerved in the Gardens of the Inhabitants of *Jamaica* and *Barbadoes*. The Flowers of this kind nearly reſemble thoſe of the red Oleander, but are larger, and have an agreeable Odour. Theſe are produced in ſmall Bunches, at the Extremity of the Shoots, and generally appear in *July* and *Auguſt* in this Climate; but in the *Weſt Indies* they flower a great Part of the Year.

The milky Juice of theſe Plants is very cauſtic, and reckoned very poiſonous. In cutting off any of the Branches of the Plants, if the Knife be not immediately cleaned, the Juice will corrode it, and turn the Blade almoſt black in a very little time, ſo as not to be cleaned off again; and, if dropped on Linen, will cauſe it to waſh in Holes, equal to Aqua Fortis. *Miller's Dictionary*, *Vol.* 2.

PLUMOSUM. An Epithet for a Species of Alum.

PLUTEA, in *Avicenna*, is a Reduplication of the Dura Mater, as in the Formation of the Longitudinal Sinus.

PLUVIALIS. The Plover; of which there are two Sorts. The firſt is the *Glottis*. Offic. Genſ. de Avib. 450. *Limoſa Venetorum*. Ejuſd. *Pluvialis major*. Aldrov. Ornith. 3. 535. Will. Ornith. 220. Rait Ornith. 298. Charlt. Exer. 114. Jonſ. de Avib. 114. *Chloropus Germanis Gult ſeu Gluttis*. Aldrov. 3. 452. THE GREAT PLOVER.

The Gall of this Bird is recommended as a Remedy for Diſorders of the Eyes. A Jelly of the Fleſh is recommended as a good Analeptic, or Reſtorative.

The other Species is the *Vanellus*. Offic. Charlt. Exer. 113. Mer. Pin. 182. Geſn. de Avib. 692. Jonſ. de Avib. 113. *Capella ſive Vanellus*. Aldrov. Ornith. 3. 523. Raii Ornith. 307. Ejuſd. Synop. *A.* 110. Will. Ornith. 228. *Vaneau*. Bellon. des Oyſe. 209. THE LAPWING, or BASTARD PLOVER.

This Animal delights in marſhy Places; and its Aſhes, Heart, and Skin, are us'd for medicinal Purpoſes. The Aſhes drank in Wine, are beneficial in Colics; and, when applied by way of Cataplaſm, cure the Bite of a Mad-dog. The Heart alleviates Pains of the Loins, and the Skin is eſteem'd good in Cephalalgias. *Dale.*

They create an Appetite, yield pretty good Nouriſhment, digeſt eaſily, and are look'd upon to be good to provoke Urine, to ſtrengthen the Brain, purify the Blood, and for the Falling Sickneſs.

They are not very ſolid Food, but ſoon waſte; and therefore Perſons accuſtomed to great Exerciſes, or hard Labour, are not to uſe them. *Lemery on Foods.*

PLUMA, πλῦμα. The Water wherein any thing is waſh'd.

PNEUMA, πνεῦμα, in *Hippocrates*, ſometimes imports Spirit, Air, or Vapour; and frequently it ſignifies the Breath, that is, the Air drawn in by Inſpiration, and expel'd during Expiration. But *Pneuma*, by the above quoted Author, is often us'd to expreſs a difficult, ſhort, and laborious Reſpiration.

Pneuma halizomenon, πνεῦμα ἁλιζόμενον, from ἁλίζομαι, to be coacervated, crouded, means a raiſed, denſe, and full Reſpiration. *Coac.* 339.

Pneuma hoſper anacalumeno, πνεῦμα ὥσπερ ἀνακαλυμένῳ, from ἀνακαλέω, to recal, 1 *Epid. Æg.* 1. imports a broken Reſpiration, as when a Perſon, after a ſhort Expiration, ſeems to call back his Breath, and to expire with a renewed Force, in order to ſupply the Defects of the former Expiration. The ſame is called πνεῦμα πρόσκοπλον (*proſcopton*), and προσπλαῖον (*proſptæon*), an impinging Breath, which ſtrikes in its Paſſage, and is interrupted by the Eliſion. It is otherwiſe deſcribed, 2 *Epid.* and *Coac.* 260. by δίπλῃ ἔσω ἀνάκλισις οἷον ἐπεισπνέουσιν, a double Revocation inwards, as in thoſe who fetch their Breath "double;" and by πνεῦμα ἐνεδίπλασιάζετο, "the Breath was "double," that is, as *Foeſius* endeavours to explain it, was doubled, or ſounded double, by ſuffering an Eliſion in its Paſſage.

Pneuma anapherein, πνεῦμα ἀναφέρειν, from ἀναφέρω, to exalt, is to have a great and full Reſpiration, or to expire vaſt Quantities of Breath; which is eſteemed a Symptom of an internal Inflammation, 2 *Prorrhet. Coac.* 486. But πνεῦμα ἀνω φερόμενον, in *Lib de R. V. I. A.* is no more than the Breath diſcharged by Expiration.

Pneuma anelcomenon, πνεῦμα ἀνελκόμενον, from ἀνέλκω, to draw upwards, to raiſe, or elevate, in 1 *Prorrhet.* 87. imports a Reſpiration performed with a great Elevation of the Thorax, in ſuch a manner, that even the Scapulæ ſeem to be moved thereby, as *Galen* explains the Word; who, alſo, takes it to be uſed by *Hippocrates* in the ſame Senſe as μέλαωρον and πρόχειρον, which ſee below.

Pneuma aneſpaſmenon antica, πνεῦμα ἀνεσπασμένον ἀντικα (from ἀνασπάω, to retract) the Breath immediately or at every Turn retracted, imports an interrupted or intercepted kind of Reſpiration, which fails on a ſudden. It ſeems to be much the ſame with the πνεῦμα ἴσον συσπνώντος τινος, *Coac.* 266. and *Prorrhet.* 87. a ſhort and convulſive kind of Reſpiration, as is uſual with thoſe who fetch their Breath under Convulſions.

Pneuma aræon, mega, πνεῦμα ἀραιὸν, μέγα, is a rare and great Reſpiration, or a full Reſpiration perform'd at long Intervals (ſee ARÆON); ſuch as is proper to thoſe who labour under a Delirium, as *Galen* obſerves, *Lib.* 2. *de Dyſpn.* and *Com.* 1. in *Prorrhet.* and as it is confirmed by many Inſtances in the firſt and third Books of the *Epidemics.*

Pneumata aſema, πνεύματα ἄσημα, ſignifies an obſcure Reſpiration, or ſuch as is ſmall, interrupted, and hardly perceptible; which is uſual in Hyſterics, a Syncope, and in dying Perſons. See ASEMOS.

Pneuma bechodes, πνεῦμα βηχῶδες, from βὴξ, a Cough, is a Reſpiration attended with Coughing, from ſomething derived into the Aſpera Arteria *Coac.* 62. 632.

Pneuma dia pollou Chronou, πνεῦμα διὰ πολλοῦ χρόνου, as explain'd by *Galen*, *Lib.* 2 *de Dyſpn.* is the ſame as the *Pneuma aræon* before. The πνεῦμα διὰ χρόνου, 3 *Epid.* imports the ſame.

Pneuma manoteron, πνεῦμα μανότερον, from μανὸς, rare, looſe, *Coac* 211. imports an Alteration from a ſhort, difficult, and turbulent, to a more remiſs, rare, and eaſy Reſpiration.

Pneuma megα, πνεῦμα μέγα, a great Reſpiration, *Coac.* 126. and 290. is when, in breathing, the Thorax is very much enlarged in its Dimenſions

Pneuma meteoron, πνεῦμα μετέωρον, a ſublime and elevated Reſpiration, imports ſuch a Reſpiration as is performed with an Elevation of the whole Thorax, and an Erection of the Neck, under a great Straitneſs and Oppreſſion, as is often the Caſe in a Quinſy, Peripneumony, Pleuriſy, and Aſthma. Thus *Galen*, *Com.* 1. in *Prorrhet*, explains the Epithet; and tells us, that πρόχειρον and φαινόμενον πνεῦμα are uſed by *Hippocrates* in much the ſame Senſe. And, *Com.* 2. *in* 3 *Epid.* he further obſerves, that τὸ μετέωρον πνεῦμα may import, that the Patients under the fore-mentioned Diſorders deſire and endeavour μετεωρίζειν ἑαυτὸς, to raiſe themſelves up: Whence he ſays, μετέωρον πνεῦμα, in 3. *Epid.* is the ſame as ὀρθόπνοια (*Orthopnœa*) in *Prognoſt.* There is another Signification of μετέωρον πνεῦμα quoted by *Galen* from *Sabinus*, who deſcribes it by τὴν ἄκρα τῆ ῥινὶ γινομένην ἀναπνοὴν, "Reſpiration performed at the Top of the Noſe;" that is, when the Paſſages for Reſpiration being almoſt ſtopped, the Patient, in drawing his Breath, moves the Pinnæ of the Noſtrils, as is the Caſe with thoſe who are ſuffocated by a Quinſy, Peripneumony or *Empyema*; or when the Strength is quite exhauſted, as in dying Perſons. This Senſe of the Phraſe, tho' criticiſed by *Galen*, ſeems, to be in ſome meaſure, imply'd in that of *Hippocrates*, in 7 *Epid.* where, ſpeaking of the Wife of *Olympiades*, as almoſt expiring, he ſays πνεῦμα μετέωρον καλὰ ῥίνα σπώμενον, "Reſpiration was ſuch as is called ſublime, and perform'd "through the Noſe." *Galen*, at the End of *Lib.* 3. *de Dyſpn.* proves this μετέωρον πνεῦμα, or ſublime Reſpiration, to be, alſo, ſmall and quick, or ſhort.

Pneuma minuthodes, πνεῦμα μινυθῶδες, from μινύθω, to diminiſh, is a ſmall and weak Reſpiration, *Lib.* 2. περὶ γυναικ.

Pneuma mychthodes, πνεῦμα μυχθῶδες, *Coac.* 519. and 540, is a broken, and moſt painful Reſpiration, which is interrupted in the midſt of Expiration, as is obſervable in the ſobbing Reſpiration of Children.

Pneuma proſcopton, πνεῦμα πρόσκοπλον, from προσκόπλω, to impinge, 4 *Aph.* 67. is expreſſed in *Celſus*, *Lib.* 2. *Cap.* 7. by *Spiritus in Faucibus eliſus*, Breath ſuppreſſed or intercepted by Eliſion in the Fauces. This impinging kind of Reſpiration is explain'd by *Galen*, *Lib.* 4. *de Loc. affect.* in the following manner: "There is another Species of Dyſpnœa, he ſays, "which is, when the Action of the Thorax is interrupted by a "ſhort Reſt, ſometimes in Inſpiration, and ſometimes in Expi-"ration, whether this Symptom proceeds from a ſpaſmodic "Diſpoſition of the Muſcles of the Thorax, or from an Abun-"dance of Heat, which conſtrains the Patient to continue his "Inſpiration or Expiration".

Pneuma proſptæon, πνεῦμα προσπλαῖον, from πλαίω, to impinge or ſtrike againſt, *Lib. de R. V. I. A.* is the Breath impinging or interrupted in Expiration, as *Galen*, in his Comment in the Place, explains it.

Pneuma prochiron, πνεῦμα πρόχειρον, *quaſi* πρὸς χεῖρα, ready at hand, or obvious, is a conſpicuous Reſpiration, ſuch as is the ſublime and elevated Reſpiration accompany'd by an Elevation of the upper Parts of the Thorax and the Scapulæ, as may be obſerv'd in Aſthmatic Patients, and thoſe who die of a Suffocation. Hence it appears to be the ſame as μετέωρον. See 1 *Prorrhet.* 25. It is alſo called φαινόμενον (*phænomenon*) viſible, apparent; becauſe the Patients, as *Galen* obſerves, are plainly perceived, through their Clothes, to move the whole Scapulæ, when they draw their Breath.

Pneuma pycnon, πνεῦμα πυκνὸν, is a quick and frequent Reſpiration, and a kind of Dyſpnœa, which in *Hippocrates* is often accompany'd with a Greatneſs or Smalneſs of Reſpiration, as is obſerved by *Galen*, *Lib.* 3. *de Dyſpn.* See RESPIRATIO.

PNEUMATIÆ, πνευματίαι. See PNEUMATODES.

PNEUMATICI. An Appellation of certain Phyſicians, who conſtituted the Pneumatic Sect. See the PREFACE.

PNEUMATOCELE, from πνεῦμα, wind, and κήλη. A Tumor. A flatulent Hernia, or Wind-rupture.

PNEUMATODES, πνευματώδης, in *Hippocrates*, is one who fetches his Breath ſhort and quick, otherwiſe called *Pneumatias*, πνευματίας, as in *Lib. de R. V. I. A.* This is the Explication which *Galen*, *Lib.* 3. *de Dyſpn.* gives of the Word; where he alſo obſerves, that it ſometimes ſignifies one who has his Belly or Ilia diſtended with Flatulences; and proves it from the fourth of the *Epidemics*. *Pneumatias* and *Pneumatumenos*, πνευματῶμενος, are uſed in the ſame double Senſe. *Foeſius.*

PNEUMATOMPHALOS. An umbilical flatulent Rupture.

PNEUMATOSIS, πνευμάτωσις. An Inflation of the Stomach; or a Collection of Flatulences in the Stomach.

PNEUMENOS, πνεύμενος. Aſthmatic, or breathing with Difficulty.

PNEUMON, πνεύμων. The Lungs.

PNEUMONANTHE. A Name for the *Gentiana, anguſtifolia, Autumnalis, major.*

PNEUMONICUS. An Epithet for Medicines deſtin'd to the Lungs.

PNEUMOPLEURITIS. The ſame as PLEUROPNEUMONIA PNIGALION, πνιγαλίον. The *Incubus*, or *Ephialtes.*

PNIGITES. Offic. Charlt. Foſſ. 3. Worm. 5. *Terra Pnigites*, Aldrov. Muſ. Metall. 259. Matth. 1592. BLACK EARTH.

It

It is a fat, denſe, ſoft, black, aſtringent, and very acrimonious Subſtance, of the Taſte of Vitriol. To theſe Marks *Dioſcorides* adds, that in Colour it ſomewhat reſembles the *Eretria Terra*, is cold to the Touch, and ſo glutinous as to adhere to the Tongue. The ſame Author ſays, that it has the ſame Virtues as the Cimolia, only is weaker: Some, he ſays, ſell it for *Eretria Terra*. *Dioſcorides*, *Lib.* 5. *Cap.* 177.

PNIGMOS, πνιγμός. The ſame as PNIX.

PNIGOS, πνῖγος. A ſultry ſuffocating Heat.

PNIX, πνίξ. Any Suffocation; particularly that which happens in hyſteric Fits. With an Addition of the Epithet *Hyſteric*, it implies an hyſteric Fit.

POA. A Name for the *Gramen*; *pratenſe*; *majus*; *latiore folio*. See MILIUM.

POCAN. A Name for the *Phytolacca*; *Americana*; *majori fructu*.

POCATSJETTI. H. M. The Name of a ſmall Shrub which grows in *Malabar*. The Leaves powder'd, and ſprinkled upon Ulcers, repreſs luxuriant and fungous Fleſh; and, taken internally, they excite a Sweat, and diminiſh the Paroxyſm of an intermitting Fever.

Of the Bark, and Root, powder'd, and mixed with Oil, an Unguent is made, ſaid to be good for the Itch, and other cutaneous Diſorders. *Raii Hiſt. Plant.*

POCO SEMPIE. The Down or Moſs growing upon the *Agnus Scythicus*. This is eſteemed good for ſtopping of Blood, if given in the Quantity of ſix Grains. See AGNUS SCYTHICUS.

PODAGRA, ποδάγρα, from πούς, a Foot; and ἄγρα, a Prey. The Gout in the Feet. See ARTHRITIS.

PODAGRARIA. See ANGELICA. It is, alſo, a Name for the *Myrrhis*; *folio Angelicæ rugoſo*; *hirſuto*.

PODEON, ποδεών, is the prominent part of a Veſſel, or Bottle, made of a Skin, by which the Liquor is poured in and out, and which uſed to be tied with a String, in order to keep in the contained Fluid: Thus (*Lib.* περὶ παθῶν) πρὸς ποδεῶνα ἀσκοῦ, *&c.* To the Extremity, or prominent part of the Veſſel, or Bottle, a Pipe is tied, for introducing the Air, and diſtending the Inteſtines, in order for their being waſhed with a Clyſter, in the Cure of the Ileos. *Foeſius.*

POERINSII. A Name for the ARBOR SAPONARIA.

POINCIANA. Flower-fence.

The Characters are;

The Calyx is pentaphyllous; the Flower polypetalous, and furniſhed with numerous Stamina; the Pod is flat, hard, gaping into two Parts, and divided into Capſules, or Cells, containing roundiſh Seeds.

Boerhaave mentions but one Sort of Poinciana; which is,

Poinciana; flore pulcherrimo. *T.* 619. *Frutex*, *Pavoninus*, *ſive Criſta Pavonis*. Breyn. Cent. 1. 61. *Acacia Orbis Americani*, *altera*, *flore pulcherrimo*. H. R. Par. *Criſta Pavonis*. H. L. *Erythroxylon*, *Indicum*, *minus ſpinoſum*, *Colutææ foliis*, *ſiliquis anguſtioribus*, *flore ex luteo & rubro elegantur variegatis*. Par. Bat. Prodr. 333. *Boerh. Ind. alt. Plant. Vol.* 2.

Beſides this Sort, *Miller* mentions three more;

1. Poinciana flore luteo. *Houſt.*
2. Poinciana flore rubente. *Houſt.*
3. Poinciana ſpinoſa, vulgo *Tara*. *Feuil.*

The Seed-pods of the laſt Sort are uſed by the Dyers in the *Spaniſh Weſt-Indies*, for dying of Black; and they are, alſo, uſed for making of Ink. The Infuſion of theſe Pods with Galls affords the moſt beautiful black Ink in the World.

POLEMONIUM.

The Characters are;

The Leaves are alternate, and pinnated; the Flower is monopetalous, rotated or wheel-ſhaped, and pentapetaloidal; the Fruit is round, tricapſular, gaping, and full of oblong Seeds.

Boerhaave mentions four Species of Polemonium; which are,

1. Polemonium; vulgare; cœruleum. *Tourn. Inſt.* 146. *Boerh. Ind. A.* 252. *Raii Synop.* 3. 288. *Polemonium*. Offic. *Valeriana Græca*. Ger. 918. Emac. 1076. Park. Theat. 122. Raii Hiſt. 2. 1102. *Valeriana Græca quorundam flore cæruleo*. J. B. 3. 212. *Valeriana cærulea*. C. B. P. 164. *Vulneraria alata Blattariæ flore cæruleo*. Hiſt. Oxon. 3. 605. GREEK VALERIAN, or JACOB'S LADDER.

This Plant is produced in Woods, and flowers in Summer: The Herb itſelf, and its Root, are uſed. The Root, drank in Wine, is good againſt the Bites of venomous Animals, and Dyſenteries. When drank in Water, it is beneficial in Dyſuries, and iſchiadic Pains. A Dram of it exhibited in Vinegar, proves ſerviceable to Patients labouring under Diſorders of the Spleen: When chew'd, it mitigates Tooth-achs. *Dioſcor.*

The Herb is vulnerary. *Sim. Pauli.*

This Plant is ſo imperfectly deſcribed by the Antients, that we are as yet ignorant what it really is; ſince ſome of them make it a Species of the Valerian; and others of the Lychnis. But I have choſen to follow *Tourneſort*, who aſcribes this Name to this Plant, which is deſcribed by *Dioſcorides* in the following manner: "The Polemonium is a Plant, with ſmall Branches, "pinnated on both Sides: Its Leaves are a little larger and "longer than thoſe of Rue; greatly reſemble thoſe of Cala-"mint, or Bloodwort; and have Cluſters, in which are con-"tained black Seeds, hanging from their Tops." *Dale.*

2. Polemonium; vulgare; album. *T.* 146. *Valeriana Græca quorundam*, *flore albo*. J. B. 3. 212. *Valeriana alba*. C. B. P. 164.

3. Polemonium; vulgare; flore variegato. *T.* 146. *Valeriana Græca*, *flore ex albo & cæruleo variegato*. H. L.

4. Polemonium; vulgare; foliis eleganter variegatis. *Boerh. Ind. alt. Plant. Vol.* 1.

POLEMONIUM is, alſo, a Name for the *Lychnis*; *ſylveſtris*; *quæ Been album vulgo*. See BEHEN.

POLEMONIUM, *Monſpelienſium*. A Name for the *Jaſminum*; *luteum*, *vulgo dictum bacciferum*.

POLENTA. See ALPHITA.

POLETIS SAL. A compound Salt, deſcribed by *Actius*, *Tetrabib.* 3. *Serm.* 1. *Cap.* 24.

POLIATER. A Phyſician in ordinary to a Town.

POLIUM.

The Characters are;

The Leaves are, for the moſt part, hoary; the Stamina ſupply the Place of the Galea; the Beard is quinquefid, like that of the Chamædrys; the Flowers grow in Heads, on the Tops of the Stalks and Branches.

Boerhaave mentions ten Species of Polium; which are,

1. Polium; Lavendulæ folio. *C. B. P.* 220. *Tourn. Inſt.* 206. *Boerh. Ind. alt.* 183. *Polium alterum*. Offic. *Polium montanum*. Offic. *Polium montanum Lavendulæ folio*. Park. Theat. 25. Raii Hiſt. 1. 525. *Polium Lavendulæ folio flore albo*. Ger. Emac. 635. *Ajuga folio integro*. Rivin. Irr. M. POLEY-MOUNTAIN WITH LAVENDER-LEAVES.

This Plant is found in the Gardens of Botaniſts, and flowers in *June*. The Herb is only uſed, and is ſaid to agree in Virtues with the other Species, though in a lower Degree. *Dale.*

2. Polium; montanum; luteum. *C. B. P.* 220. *Raii Hiſt.* 1. 525. *Ger.* 528. *Emac.* 653. *Tourn. Inſt.* 206. *Boerh. Ind. A.* 183. *Polium montanum*. Offic. Chom. Pl. Uſu. 352. *Polium montanum vulgare*. Park. Theat. 24. YELLOW POLEY-MOUNTAIN.

This Plant is produced in *Provence* in *France*, and in *Spain*: It flowers in *June*. The Herb is uſed; and is ſaid to agree in Virtues with the white Poley-mountain. *Dale.*

3. Polium; Lavandulæ ſolio anguſtiori. *C. B. P.* 220.

4. Polium; montanum; repens. *C. B. P.* 221.

5. Polium; Pyrenaicum, ſupinum; Hederæ terreſtris folio. *T.* 206. *An Chamædrys montis Sumani*. J. B. 3. 289.

6. Polium; montanum; luteum; daſyphyllum; ſerratum; tomentoſum. *M. H.* 3. 355.

7. Polium; montanum; luteum; ſerratis, anguſtioribus, incanis, foliis. *Barrel. Ic.* 34.

8. Polium; montanum; album; ſupinum; folio ad ſuprema crenato; capitulis multis, globoſis.

9. Polium; maritimum; ſupinum; Venetum. *C. B. P.* 221. *Polium Venetum*. J. B. 3. 300.

10. Polium; Hiſpanicum; fruticoſum; maritimum; Roriſmarini folio; flore rubro. *T.* 207. *Boerh. Ind. alt. Plant. Vol.* 1.

This Plant reſiſts Putrefaction, and with it the Sea-ſkink is, for that Reaſon, preſerved; becauſe Vinegar and Salt are not thought good enough for the Preſervation of ſo delicious and coſtly an Animal: This Plant is bitter, and approaches much to the Nature of Germander: It provokes Urine, removes Obſtructions of the Menſes, and cures the Jaundice. An Infuſion of the Leaves and Flowers is beneficial in lethargic Diſorders, and, conſequently, in Epilepſies: What the Polium of the Antients was, we know not. This Plant is an Ingredient in various Confections, Opiates, and in the Theriaca. It is ſaid to be beneficial againſt the Bites of poiſonous Animals. *Hiſt. Plant. adſcript. Boerh.*

POLIUM CRETICUM. A Name for the *Teucrium*; *calice campanulato*; *ſtœchados facie*.

POLIUM GNAPHALODES. A Name for the *Gnaphalium*; *maritimum*.

Beſides the foregoing Species of Polium, *Dale* mentions the two following,

1. *Polium montanum*. Offic. *Polium montanum album*. C. B. P. 221. Ger. 528. Emac. 653. Raii Hiſt. 1. 524. Tourn. Inſt. 206. *Polium montanum Monſpeliacum*. Park. Theat. 24. WHITE POLEY-MOUNTAIN.

This Plant is produced in *Italy* and *France*, and flowers in the Summer: The only Part of it uſed is the Herb itſelf, which ought to be choſen recent and odorous: It provokes Urine and

the Menſes, aſſiſts dropſical and icteric Patients, and is beneficial in the Bites of venomous Animals. *R. H.* It is, alſo, of an inciding and aperient Quality.

Dioſcorides makes two Kinds of Polium; one of which is the Poley-mountain, which he deſcribes in the following manner: "It is, *ſays he*, a ſmall white Shrub, nine Inches long, "and full of Seeds; which, on their Tops, bears a ſmall "Head, reſembling a certain Species of Cluſters, or the grey "Hairs of a bald Perſon: This Head has a diſagreeable Smell, "but is ſomewhat ſweet to the Taſte. The other Species of "Polium is more of the Nature of a Shrub, and is not ſo "ſtrong, with reſpect to its Smell, and other Qualities." The above-quoted Deſcription of Poley mountain is ſo ſhort, that Botaniſts, in different Countries, have taken it, ſome for one Plant, and ſome for another. *Tournefort* and *Chomel* have given the Poley-mountain, both white and yellow, of *C. B. P.* a Place in the Materia Medica. *Herman* and *Rockerus* think, that the white is the *Polium Officinale*; and *Commelin* and *Philip Miller* take the yellow *Polium* to be the *Polium Officinale*. But *Ruppius* takes the *Polium Lavendulæ Folio.* Pin. for the *Polium Montanum.* And *Joſeph Miller*, and *Rand*, take the *Polium Maritimum erectum Monſpeliacum* of *C. B.* for the Poley-mountain: Concerning which *Magnol* informs us, that the *Polium montanum album* of *C. B.* is much ſmaller, and not of ſo grateful a Smell. For this Reaſon, tho' the *Polium montanum album* ought to be preferred in the Shops, yet I have not omitted the other Species.

Beſides the Species already mentioned, there is another, tho' not ſo frequently found in the Shops: It grows in *Crete*; and, becauſe it is of a more grateful Smell, and more efficacious, than the others, is, therefore, preferable to them. *Dale.*

2. *Polium montanum.* Offic. Mill. Bot. Offic. 352. Rand. Ind. Plant. Offic. 69. *Polium maritimum erectum Monſpeliacum.* C. B. P. 221. Raii Hiſt. 1. 524. Tourn. Inſt. 206. *Polium Monſpeſſulanum.* J. B. 3. 299. *Polium montanum minus.* Park. Theat. 23. ERECT, or MOUNTAIN POLEY.

This Polium grows to be about a Foot high, much branched with ſquariſh woolly Stalks, having two ſmall, white, woolly Leaves at a Joint, not above half an Inch long, and ſcarce half ſo broad, blunt-pointed, indented about the Edges towards their Ends: The Flowers grow at the Ends of the Branches, in roundiſh, woolly, thick Spikes, ſmall, and of a white Colour, labiated, but having no Galea, being ſet in white, hoary, five-pointed Calyces. Both Leaves and Flowers have a pleaſant aromatic Scent. It grows in *Italy*, and the Southern Parts of *France*, and flowers in *July*. The Tops and Heads are uſed.

Mountain-poley is opening and attenuating, good for Obſtructions of the Liver and Spleen, helps the Dropſy and Jaundice, provokes Urine and the Menſes, and is good againſt the Bites of venomous Creatures; and is an Ingredient in the Theriaca Andromachi. *Miller's Bot. Off.*

POLLEX. The Thumb. *Pollex Pedis* is the great Toe.

It often happens, that the Nail of the great Toe, on one Side, turns in, and enters the Fleſh, thereby occaſioning violent Pains and Inflammation, ſo that the Patient cannot walk without the greateſt Difficulty. The moſt general Cauſe of this Diſorder is wearing ſtrait Shoes: Whence it is plain, that the propereſt Method of preventing it is to wear Shoes ſufficiently wide and eaſy. If the Nail is already fixed in the Fleſh, let the Patient keep his Foot in warm Water for half an Hour, till the Nail begins to ſoften; and, to make it yield the more eaſily, ſcrape it with a Knife, or Piece of Glaſs; then, gently raiſing the Nail with the Finger, or a proper Probe, interpoſe, between the Nail and the Fleſh, a little ſcraped Lint, and dreſs with warm Spirit of Wine. This muſt be repeated, till the Pain is removed.

If this Method proves ineffectual, we muſt have recourſe to the Knife. For this Purpoſe, let the Foot be ſome time bathed in warm Water, for the Reaſon already given; then place it upon a Seat, where it muſt be firmly held by an Aſſiſtant: Then let the Operator carefully inſinuate a Pair of ſtrong Nail-ſciſſars (ſee *Tab.* LVII. *Fig.* 12. 13.) under the injurious Part of the Nail, to cut it off; and, if it does not fall off of itſelf, it muſt be extracted by the Forceps. Though the Patient will feel the Operation extremely painful, yet he will ſoon be ſenſible of the Eaſe it has procured him. Let the Part be then dreſſed with ſcraped Lint, or Compreſſes moiſten'd in Oxycrate, or warm Spirit of Wine, or Lime-water; and it may be fomented twice or thrice a Day, till the Inflammation and Pain ceaſe. In the mean time, the Patient ſhould reſt for ſome Days, till all Danger of the Pain and Inflammation be removed. Sometimes proud Fleſh ſprouts up, which may be eaſily conſumed with burnt Alum. In order to prevent the Nail from growing again into the Toe, and producing the ſame Trouble, *Dionis* recommends, that the Shoes ſhould be made eaſy; and the Nail ſhould be every Month ſcraped ſo thin, with a Piece of Glaſs, or ſharp Knife, that it may not have Strength

to run into the Fleſh, by the Preſſure of the Shoe. *Heiſter's Surgery.*

POLLINCTURA. The embalming of dead Bodies.

POLLUTIO. An Incontinence of the ſeminal Juices; a Species of GONORRHOEA; which ſee.

POLPHOS, πόλφος. A Bulb, or bulbous Root.

POLYÆMIA, πολυαιμία, from πολὺς, much; and αἷμα, Blood. A Redundance of Blood, or PLETHORA.

POLYANTHOS. A Name for the PRIMULA VERIS.

POLYANTHUS. A Name for the Acarna. See CARDUUS.

POLYARCHION. The Name of a Malagma; thus called from *Polyarchus*, its Author. It is deſcribed by *Galen*, *Lib.* 8. *de Comp. M. S. L. Cap.* 5. and *Lib.* 7. *de Comp. M. S. Gen. Cap.* 7. From whence *Aetius* and *Paulus Ægineta* have tranſcribed it.

POLYCHRESTOS, πολύχρηστος. An Epithet for many Medicines, importing their being good, or uſeful for many Diſorders; from πολὺς, much, and χρηστὸς, uſeful.

The BALSAMUM POLYCHRESTON is deſcribed under the Article BALSAMUM.

In *Lemery's Pharmacopée Univerſelle*, we find the following Pills deſcribed:

Pilulæ Polychreſtæ. Meſue.
— *Polychreſtæ.* Quercetani.
— *Polychreſtæ.* Quercetani Reformatæ.
— *Polychreſtæ Majores.* Meſue.
— *Polychreſtæ Majores Reformatæ.*
— *Polychreſtæ Minores.* Meſue.
— *Polychreſtæ Minores Reformatæ.*

POLYCLONOS. Ramoſe, or abounding with Branches. An Epithet for the *Artemiſia*, Mugwort.

POLYCNEMON. See CALAMINTHA PALUSTRIS.

POLYETES ANTIDOTUS. The Name of ſeveral Antidotes deſcribed by *Nicolaus Myrepſus.*

POLYGALA.

The Characters are;

The Leaves are alternate; the Calyx conſiſts of five Leaves, the two larger of them expanded like Wings, and the three leſſer acute; the Flower is monopetalous, anomalous, perſonated, with its hinder Part perforated, and its fore Part bilabiated, the upper Lip bifid, and the lower beautifully fimbriated, or fringed: It is furniſhed with eight Stamina, and diſpoſed in looſe Spikes. The Fruit, which is embraced by the quinquephyllous Calyx, as with Wings, is compreſſed, gaping into two Parts, and divided into two Capſulæ, or Cells.

Boerhaave mentions ſix Species of Polygala; which are,

1. Polygala; vulgaris. *C. B. P.* 215. *Tourn. Inſt.* 174. *Boerh. Ind. A.* 236. *Polygala.* Offic. Ger. 448. Emac. 563. Raii Hiſt. 2. 1335. Synop. 3. 287. *Polygala minor.* Park. Theat. 1332. *Polygalon multis.* J. B. 3. 386. *Flos Ambarvalis vulgo.* Herm. Cat. 500. MILKWORT.

Geſner, who, in his Letters, calls this Plant *Amarella*, affirms, that an Handful of it, infuſed in a Glaſs of Wine, purges very well, and without any ill Conſequence. *Martyn's Tournfort.*

This Plant is moſt frequently found in dry Meadows, and flowers in *July*. The Herb itſelf is only uſed. Its bitter Taſte proves it to be of an hot and drying Quality: Its Leaves, boiled in Wine, purge Bile, by Stool. *Geſn.*

This is the Polygala of the Shops of *England*, and of the modern Botaniſts: But that it is the Plant to which *Dioſcorides* gives the ſame Name, neither its Deſcription nor Virtues will ſuffer us to believe; ſince it has neither the Leaves of the Lentil, nor a Power of increaſing Milk, both which are aſcribed to the Polygala. *Dale.*

2. Polygala; flore rubro; purpuraſcente. *H. Eyſt. Vern.* 6. 6. *F.* 11. *Fig.* 2.

3. Polygala; alba. *Tabern. Ic.* 831.

4. Polygala; carnea.

5. Polygala; violacea.

6. Polygala; fruteſcens; folio Buxi; flore maximo. *Oldenl. T.* 175. *Chamæbuxus, flore Coluteæ ex purpura rubeſcente.* C. B. P. 471. *Anonymos, flore Coluteæ.* Cluſ. H. 105. *Pſeudo-Chamæbuxus.* H. Eyſt. Vern. 6. 6. F. 12. F. 3. *Boerh. Ind. alt. Plant. Vol.* 1.

POLYGALA is, alſo, a Name for ſeveral Sorts of CORONILLA; which ſee.

Beſides the foregoing Species of Polygala, *Dale* mentions the following;

POLYGALA VERA. Offic. *Polygala major Maſſiliotica.* C. B. P. 349. *Polygala Valentina maritima.* Park. Theat. 228. *Colutea caule Geniſtæ fungoſo.* J. B. 1. 383. Raii Hiſt. 1. 925. *Coronilla caule Geniſtæ fungoſo.* Tourn. Inſt. 650. *Aſtragalus Matthioli.* Ger. 1059. Emac. 1239. MILKVETCH.

This Plant is cultivated in Gardens, and flowers in Summer. The only Part of it uſed is the Herb itſelf, which, according

to *Dioſcorides*, increaſes the Quantity of Milk, if drank in ſome proper Liquor.

The *Polygala* was ſo common and well-known a Plant among the *Greeks*, that *Dioſcorides* has only given a very ſhort Deſcription of it, which has laid a Foundation for various Diſputes among the Botaniſts. The *Polygala* here ſpoken of, ſeems to be the genuine *Polygala* of *Dioſcorides*; becauſe, as *Matthiolus* juſtly obſerves, it exactly agrees with the Deſcription of that Plant. *Calceolarius* affirms, that he has often found from Experience, that it augmented the Milk of Nurſes. *Dale.*

POLYGALON. A Name for the *Coronilla*; *minima*; and, alſo, for the *Polygala vulgaris.*

POLYGANON. A Name for the *Polygala*; *vulgaris*; and, alſo, for the *Onobrychis major*; *ſiliculis echinatis, criſtatis, in Spica digeſtis.*

POLYGLOTTA. The Name of a beautiful *Indian* Bird, remarkable for its Song, but of no Uſe in Medicine.

POLYGONATUM.

The Characters are;

The Flowers are monopetalous, Bell-ſhaped, tubulated, naked, divided into ſix Segments, and furniſhed with ſix Stamina, which grow out of the Inſides of the Diviſions. The Ovary, which grows in the Centre of the Flower, produces a long Tube, furniſhed with a fimbriated Apex; and becomes a ſoft, globular Fruit, full of roundiſh Seeds.

Boerhaave mentions ſeven Species of *Polygonatum*; which are,

1. Polygonatum; latifolium; vulgare. *C. B. P.* 303. *Tourn. Inſt.* 78. *Boerh. Ind. A.* 2. 63. *Polygonatum, Sigillum Solomonis.* Offic. *Polygonatum.* Ger. 756. Emac. 903. Raii Hiſt. 1. 664. Synop. 3. 263. *Polygonatum vulgare.* Park. Theat. 696. *Polygonatum, vulgo Sigillum Solomonis.* J. B. 3. 529. SOLOMON'S SEAL.

The Root of *Solomon's Seal* is about a Finger thick, white and woody; full of flat, ſeal-like Impreſſions, creeping upon the Surface of the Earth, with many pretty large Fibres. The Stalks grow to be about a Foot high; ſingle, and not branch'd; round and ſlender; cloathed with pretty large, oval, nervous Leaves, of a bluiſh-green ſhining Colour, ſet alternately on the Stalks, and inclining all to one Side, and having the Top bowing that way. The Flowers come from the Boſoms of the Leaves, on pretty long Foot-ſtalks, generally two together; being hollow and cylindrical; of one Leaf; parted; at the Ends, into five Segments; theſe, alſo, hang all one Way, and are of little or no Scent. They are ſucceeded by round Berries, green at firſt, and black when ripe; divided into three Parts; containing ſmall oblong Seeds. It grows in Woods and Copſes, in divers Parts of *England*, and flowers in *May*. The Leaves and Root are uſed.

Solomon's Seal is vulnerary and reſtringent; good to ſtop all Kinds of Fluxes and Hæmorrhages; helps to conſolidate Wounds, Fractures, and Ruptures; eſpecially the Root, which, preſerved in Sugar, is commended by *Matthiolus*, as of great Service againſt the Fluor Albus. A Cataplaſm of the Root is good to take away black and blue Marks, ariſing from Contuſions. *Miller's Bot. Off.*

The Fruit of the Polygonatum is black, and cover'd with a Meal like freſh Plums; which, perhaps, deceived *Cæſalpinus*, who affirms it to be whitiſh.

Fuchſius, to accommodate himſelf to *Dioſcorides*'s Deſcription of the Polygonatum, fancied he found ſomething like the Taſte of Pomegranates in this Species. It might be ſo, perhaps, in *Greece*; but *Galen* found nothing in it, ſave an unpleaſant Bitterneſs.

The Leaves of our Solomon's Seal are inſipid. They have ſomething glutinous in them, which gives ſlight Nauſeas. The Roots are ſweet, a little acrid, and glutinous; they give a faint red Colour to the blue Paper; and the Leaves more faint. This Plant ſeems to contain a viſcous Phlegm, mix'd with a great deal of Oil. For, by the chymical Analyſis, it yields little beſides ſome acid Liquor and Oil; a little Earth, and fix'd, but no volatile Salt.

Schroder affirms, that fourteen or fifteen Berries of Solomon's Seal provoke Vomiting; and they ſay, that one Dram of its Root has the ſame Effect. Some macerate half an Ounce of it all Night in a Glaſs of White-wine, and give the Infuſion of it to drink, for ſeveral Months together, to thoſe that have Ruptures. The Patients never vomit, and find great Relief; eſpecially if the Roots are applied to the Part at the ſame time. They are very good, alſo, for all ſorts of Contuſions. The diſtil'd Water clears the Face, and beautifies the Complexion. The Decoction of the whole Plant cures the Itch, and the like cutaneous Diſeaſes. *Martyn's Tournefort.*

2. Polygonatum; latifolium; vulgare; cauliculis rubentibus.
3. Polygonatum; latifolium; maximum. *C. B. P.* 303.
4. Polygonatum; latifolium; flore duplici; odoro. *H. R. Par.*
5. Polygonatum; latifolium; Hellebori albi foliis. *C. B. P.* 303.
6. Polygonatum; latifolium; minus; flore majore. *C. B. P.* 303.
7. Polygonatum; anguſtifolium; non ramoſum. *C. B. P.* 303. *Polygonatum, anguſtifolium.* J. B 3. 531. *Polygonatum, alterum.* Dod. p. 345. *Boerh. Ind. alt. Plant.*

POLYGONUM.

The Characters are;

The Root is creeping, and very fibrous; the Stalks and Branches are very full of Joints. The Calyx is deeply cut into five Segments, which, in their lower Part, are herbaceous; but, above, of a floſculous Colour; when ripe, the Calyx becomes a Capſule of Seed. The Flowers are produced at the Wings of the Leaves, and are conceal'd, in their firſt Riſe, under a very thin Membrane; the Seed is exactly triangular.

Boerhaave mentions two Species of *Polygonum*; which are,

1. Polygonum; latifolium. *C. B. P.* 281. *Tourn. Inſt.* 510. *Boerh. Ind. A.* 2. 88. *Centinodium, Polygonum.* Offic. *Polygonum mas vulgare.* Ger. 451. Emac. 565. Raii Hiſt. 1. 184. *Polygonum mas vulgare majus.* Park. 443. *Polygonum ſive Centinodia.* J. B. 3. 374. COMMON KNOT-GRASS.

The Stalks of this Plant recline pretty much to the Earth, being ſmooth, and finely chaneled, ſlender, and branched, full of Knots or Joints, at which grow long oval ſharp-pointed Leaves, ſet alternately on ſhort Foot-ſtalks. In ſome Plants theſe will be broader, and more oval, in others longer and ſharper; whence Authors have made two Sorts. At the Joints, with the Leaves, grow ſeveral ſmall, ſtaminous, blinking Flowers; ſometimes of a white, and ſometimes of a rediſh Colour; in each of which grows a ſmall black triangular Seed. The Root is long and large, and ſtrikes deep in the Earth. It grows every-where by Wayſides, and in waſte Places; flowering in Summer; the Herb is uſed.

Knot-graſs is cooling, drying and binding, a good Vulnerary, and helpful againſt all Kinds of Bleedings, either external or internal, as againſt Fluxes; and outwardly applied, is good for Bloodſhot, inflamed Eyes. *Miller's Bot. Off.*

This Plant has an herby, glutinous Taſte, and a little Acid; it gives a deep Tincture of Red to the blue Paper; it is likely, that the Salt of Knot-graſs reſembles Alum, but is mixed in this Plant with a little Sal Ammoniac, and a great deal of Sulphur. For,

By the chymical Analyſis, it yields a great deal of Acid, Earth, and Oil, a little volatile, concrete, and very lixivial fixed Salt.

Knot-graſs is very vulnerary and aſtringent; the Juice, Ptiſan, or Infuſion of it in Wine, is given to drink for the Dyſentery, Piles, Spitting of Blood, and all Sorts of Hæmorrhages; the Extract has the ſame Virtues; the Leaves, bruiſed, cure Wounds. *Martyn's Tournefort.*

2. Polygonum; oblongo; anguſto; folio. *C. B. P.* 281. *M. H.* 2. 591. *Boerh. Ind. alt. Plant.*

Polygonum is, alſo, a Name for ſeveral Sorts of *Herniaria.*

Polygonum bacciferum. A Name for the *Ephedra*; *maritima*; *minor.*

Polygonum Cocciferum. See COCCUS and KNAWEL.

Polygonum Germanis. See KNAWEL.

Polygonum maritimum. A Name for the *Ephedra*; *maritima*; *major.*

Polygonum minimum. A Name for the *Knawel*; *folio Alſines, glabro*; *floſculis plurimis.*

Polygonum montanum. A Name for the *Paronychia*; *Hiſpanica*; and for the *Paronychia, Hiſpanica*; *nivea polyanthos.*

Polygonum, perenne. A Name for the *Telephium*; *Dioſcoridis.*

POLYIDÆ SPHRAGIS. The Name of a Paſtil, deſcribed by *Celſus, Lib. 5. Cap* 20. It conſiſts of ſciſſile Alum, four Drams; Vitriol, two Drams; Myrrh and Aloes, five Drams; of the Heads of Pomegranates, and Bulls Gall, each ſix Drams: All which, when triturated, are to be mixed with auſtere Wine.

POLYMORPHOS. Multiform; an Epithet for the *Os Sphenoides.* See CAPUT.

POLYNEURON. A Name for Plantain.

POLYOSTEON. A Name for that Part of the Foot which conſiſts of a great Number of Bones.

POLYPHARMACOS. The ſame as POLYCHRESTOS.

POLYPHOROS. An Epithet of Wine, importing ſtrong and generous.

POLYPOIDES. The ſame as MILLEPEDES.

POLYPODITES. An Epithet for Wine impregnated with *Polypody.*

POLYPODIUM.

The Characters are;

The Plant is not ramous; the Leaf is cut to the very Rib, into narrow oblong Parts, not adhering to a Pedicle, but with a wide Baſe embracing the Rib. Oftentimes the Lobes, or Segments, are not divided as far as the Rib, but are continuous, or joined by a leafy Structure. The Fruit grows on each Lobe, in a double Row, parallel to the Rib of that Lobe, and are membranaceous, covered with a thin Pellicle, and ſurrounded with an elaſtic crenated Circle, which explicating itſelf into a ſtrait Line, diſcharges, with ſome Violence, angulous Seeds, growing within two very tender Membranes.

Boerhaave mentions ſix Species of *Polypodium*; which are,

1. Polypodium; vulgare. *C. B. P.* 357. *Park.* 1039. *Tourn. Inſt.* 540. *Boerh. Ind. A.* 24. *Polypodium, Quercinum.* Offic. *Polypodium.* J. B. 3. 746. Ger. 972. Emac. 1132. Raii Hiſt. 1. 137. Synop. 45. *Filix Polypodium dicta.* Herman. Cat. 258. POLYPODY OF THE OAK.

This

This is a capillary Plant, conſiſting only of pretty large, long, unbranched, pinnated Leaves, whoſe blunt Pinnæ are very finely indented, and grow not directly oppoſite to one another on the Stalk, but alternately, a little above one another; the Leaves terminate in a ſharp Point, having no Pinnæ on the lower Part of the Stalk: On the back Part of each Pinna, come forth the Flowers and Seed, in double Rows of round Tubercles, of a reddiſh-brown Colour. The Root is ſlender, and full of ſmall Knots, which appear like the Feet of an Inſect, whence it takes the Name of *Polypodium*; it is of a browniſh Colour on the Outſide, and greeniſh within, of a ſweetiſh ſtyptic Taſte. It grows upon old Walls, and at the Roots of Trees, and in the decayed Bodies of them; that which grows on the Oak, is moſt eſteemed. The Roots only are uſed.

They are accounted opening, and gently purging; but are rarely given by themſelves, but put among thoſe purging Simples, which are ſtronger; they are ſuppoſed to purge bilioſe, melancholic Humours, and to open Obſtructions of the Liver, and to help the Jaundice and Dropſy, and provoke Urine; they are good for the Scurvy, and are frequently an Ingredient in antiſcorbutic Diet-drinks. *Miller's Bot. Off.*

The Root, being analyſed, yields ſeveral acid Liquors, a little urinous Spirit, no concreted volatile Salt, a good deal of Oil, and a moderate Quantity of Earth. The Antients believed this Root was purgative. *Monardes* was the firſt among the Moderns, who knew that it looſened the Body but very gently. And *Dodonæus* confeſſes it does not purge at all, unleſs it is boiled in Cock-broth, with Mallows and Leeks. It ſweetens the Blood, and removes Obſtructions of the Bowels. It muſt be uſed in a dry Cough, when the expectorated Matter is ſaltiſh, in the Aſthma, Scurvy, and hypochondriac Affections. It is an Ingredient in ſeveral Compoſitions. *Martyn's Tournefort.*

2. Polypodium; minus. *An. C. B. P.* 358. *Dod. p.* 464.

3. Polypodium, ſenſibile; aut Polypodium Virginianum. *Munt. H.* 289. *Herba viva, foliis Polypodii.* C. B. P. 359. *Filix Indica, Polypodii facie.* Menzel.

4. Polypodium; Cambro-Britannicum; pinnulis ad margines laciniatis. *Raii H.* 137. *Filix, ampliſſima; lobis foliorum laciniatis, Cambrica.* Pluk. Phytogr. T. 30.

5. Polypodium; tenerum minus. *Boerh. Ind. A.* 25. *Dryopteris.* Offic. *Dryopteris Adverſariorum.* Ger. Emac. 1135. *Dryopteris ſive Filix Querna repens.* Park. 1041. *Filix Querna.* C. B. 358. *Filix minor non ramoſa.* J. B. 3. 740. Tourn. Inſt. 537. Raii Hiſt. 1. 46. Synop 48. OAK-FERN.

This Plant, the Whole of which is uſed, grows in marſhy and putrid Places: When triturated with its Roots, it takes Hairs off the Body. It is to be apply'd by way of Ointment, and, when the Body is in a Sweat, the Sweat is to be wip'd off, and the Ointment apply'd again. *Dioſcor.* It is poſſeſs'd of a ſeptic Quality.

Rondeletius affirms, that he has found bad Effects produced by this Plant, when mixed with Medicines inſtead of Polypodium, by ſome ignorant Apothecaries of *Dauphiné*. I have ſometimes found it in the Shops of ſome Apothecaries under the Title of *Adianthum album. Dale.*

6. Polypodium; anguſtifolium; folio vario. *Tourn Inſt.* 540. *Boerh. Ind. A.* 25. *Lonchitis.* Offic. *Aſpera.* Ger. 978. Emac. 1140. Raii Hiſt. 1. 138. Synop. 45. *Aſpera minor.* Park. 1042. *Minor.* C. B. 359. *Lonchitis altera foliis Polypodii.* J. B. 3. 744. *Lonchitis altera foliis Polypodii, Aſplenium ſylveſtre nonnullis.* Chab. 556. *Filix ſive Lonchitis altera foliis Polypodii.* Pluk. Almag. 152. ROUGH SPLEENWORT.

This Plant grows in moiſt, woody, rough, and uncultivated Places. The Herb is proper for agglutinating Wounds, without ſuffering an Inflammation to come on. When drank in Vinegar, it conſumes the Spleen. *Dioſcor.* The Root is aperient and diuretic. *Boerhaave.*

POLYPOSIA, πολυποσία. A copious drinking of Wine.

POLYPUS, πολύπους. A Name for any Animal poſſeſs'd of many Feet. But it is generally apply'd to a large Sea-fiſh, reſembling a Cuttle-fiſh. It has eight Claws or Legs, which ſerve it to ſwim, walk, and convey its Aliments to its Mouth. Theſe Claws, tho' diſtant from each other, are, nevertheleſs, joined by a large Membrane, which runs between them. The four middle Claws are the largeſt, in Bulk ſurpaſs a Man's Arm, and are all along adorned with a double Range of Tubercles, like ſmall Horns. The four other Claws are call'd Brachia, Crura, Cirri, and Barba. The Eyes of this Fiſh are lodged at the Root of two of theſe Claws, and its Mouth, which is furniſhed with Teeth, is ſituated in the Middle. It has upon its Back a long Body, which, like a Rudder, it turns ſometimes one way, and ſometimes another, according as it intends to ſteer its Courſe. Its Fleſh is not covered with any apparent Skin, but is ſpongious or porous, hard, and of difficult Digeſtion. This Fiſh is found in the *Adriatic* Sea, and feeds upon Shell-fiſh, human Fleſh, when it can find it, Fruits and Herbs: It, alſo, loves Oil; it has, like the Cuttle-fiſh, near its Stomach, a Bladder full of a black or reddiſh-brown Liquor, which it diſcharges, when it intends to conceal itſelf. Its Eggs are like thoſe of the Cuttle fiſh, but of a whitiſh Colour. It contains a large Quantity of Oil, Phlegm, and Salts, both of a volatile and fixed Kind. Its Fleſh, when roaſted and eaten, is good againſt a windy Colic. *Lemery Traité des Drogues.*

POLYPUS.

That Men in the Flower of their Age, and bleſſed with a naturally ſound and robuſt Conſtitution, often die ſuddenly and unexpectedly, is ſufficiently confirmed by Experience. Nor are the Vulgar ignorant, though Phyſicians cannot often account for the Thing, that there are ſome chronical and violent Diſorders, whoſe Diagnoſtics and Prognoſtics are highly difficult, and which are in themſelves ſo obſtinate, as to prove mortal. But, the more frequent theſe Diſeaſes are, and the more fond People are of knowing their Natures, the more ſurpriſing it is, that the genuine Cauſes of ſuch Effects have ſo long remained latent, till luckily the modern Phyſicians began to make Anatomical Diſſections of the Perſons who have died of ſuch Diſorders, with a View to diſcover the genuine Condition of their Viſcera; for Medicine has made more Advances in this preſent Age, by means of Anatomy alone, than were made in all preceding Ages, in which it was neglected; for as, by diſſecting Bodies, many Cauſes of ſudden Deaths, and dangerous Diſeaſes, have been detected, ſo the moſt conſiderable of theſe are the Coagulations and Concretions of the Blood, firmly impacted in the large Veſſels of the Heart and Lungs, and known by the Name of *Polypuſes*; which, by intercepting and obſtructing the free Circulation of the Blood, are capable, not only of deſtroying all the Functions. but, alſo, Life; for which Reaſon they are with Difficulty cured, and ought to have their fatal Cauſes in due time prevented, or removed by proper Medicines.

But that we may prove, that ſuch Polypoſe Concretions have frequently been found, in diſſected Carcaſes, to be the Cauſes of Death, and incurable Diſeaſes, we ſhall enumerate a few Inſtances of this Kind, from the Writings of modern Authors. Thus *Bartholine*, in *Lib. de Lacteis Thoracicis, Cap.* 14. informs us, that in thoſe who died ſuddenly, he, upon laying them open, found the larger Veſſels of the Heart filled with a concreted Blood. This is, alſo, evinced by *Bonetus*, in *Anatom. Pract. Lib.* 2. *Sect.* 2. *Obſ.* 5. where he treats at large of ſudden Deaths produced by extraneous Bodies found in the Sinuſes of the Heart. And *Frdericus Loſſius*, in *Lib.* 1. *Obſ.* 15. mentions a Boy of three Years of Age, who, though ſeemingly robuſt, and in good Health, yet died unexpectedly in his Mother's Arms: Upon diſſecting the Body, the Viſcera appeared perfectly ſound, ſo that, beſides an highly coagulated Blood in the Ventricles of the Heart, no other Cauſe of Death could be diſcovered. *Carolus Fracaſtorius*, who had many Opportunities of diſſecting thoſe who died ſuddenly, found nothing as the Cauſe, but Blood concreted and impacted in the Ventricles of the Heart, and in the pulmonary Veſſels. And, that many died ſuddenly from an Infarction of the Veſſels, is ſufficiently evinced by *Panarolius*, who informs us, that, in the Year 1656, when ſudden Deaths raged ſo much, many were ſuffocated by too large a Quantity of Blood retained within the Heart; ſo that, upon laying open the Bodies of theſe Perſons, he hardly found any other Cauſe for their Misfortune, than a remarkable Infarction of the Veſſels. *Joannes Daniel Horſtius*, in *Manuduct. ad Med.* informs us, that in a Perſon who died ſuddenly, he found a whitiſh Phlegm in the Left Ventricle of the Heart. And *Riverius*, in *Cent.* 1. *Obſ.* 82. tells us, that, in the Left Auricle of the Heart of a Man who died ſuddenly, he found a thick, compact, and entirely white Matter, reſembling boiled Bacon.

From what has been ſaid, it is ſufficiently obvious, that in all Ages ſuch Concretions of Blood have been formed in the Heart, and larger Veſſels, as have produced ſudden Deaths, and other incurable Diſorders. But ſince, in the Writings of the Antients, the Word *Polypus* does not occur, we may reaſonably conclude, that the Moderns have beſtowed this Name upon ſuch Concretions, becauſe they generally ſend off many Ramifications, diſperſed here-and-there among the adjacent Veſſels; but, notwithſtanding this Interpretation, it is to be obſerved, that the true Polypuſes are only ſuch Concretions, as conſiſt of a whitiſh, fibrous, and pretty compact Subſtance, and are widely different from grumous or coagulated Blood; which, though it may create various violent Diſorders in ſeveral Parts, eſpecially when lodged in the Heart and Uterus, yet it hardly deſerves the Name of a Polypus, but is, for the moſt part, by Authors called a *Pſeudo-polypus.*

We now come to conſider, why polypoſe Concretions are ſo fatal to Mankind. Now theſe Concretions are principally the Cauſes of violent Diſorders, and of Death, when their Bulk is ſo increaſed, or, which more frequently happens, when they are, either by a ſlight internal, or external Cauſe, ſo removed from their Seat, as to intercept and diſturb the free Circulation of the Blood from one Ventricle of the Heart, through the Lungs, to the other; or when, by blocking up the Orifices of the Veſſels, they entirely deſtroy the Circulation of the Blood; for ſo long as ſmall polypoſe Concretions only adhere to the Sides of the Veſſels of the Heart, and of the other Veſſels,

they

they do not much retard the Circulation of the Blood; and for that Reaſon do not manifeſtly injure the Functions. This is confirmed by Experience, which teaches us, that ſuch Concretions may be formed in the Auricles and Sinuſes of the Heart, on account of the various Windings, and fleſhy Fibrils, about the Divarications of the Veſſels, and, alſo, in other Parts of the Body, whilſt, at the ſame time, the Blood is, notwithſtanding, ſuffered to circulate freely. Thus *Veſalius*, in *Lib.* 1. *Cap.* 5. *de Corporis humani Fabrica*, informs us, that, in the Left Ventricle of the Heart of a certain Man, he found almoſt two Pounds of glandular, but blackiſh Fleſh, the Heart being extended like the Uterus; and he adds, that though the Patient's Pulſe was ſurpriſingly unequal and various, yet he walked about like a ſound Perſon for ſeveral Months before his Death, till at length, during the laſt Weeks of his Life, his Pulſe became ſo greatly intermittent, that, during the Time uſually requiſite for nine natural Strokes of the Pulſe, only two or three could be perceived in him.

We next come to conſider what Diſeaſes are produced, obſtinately ſuſtained, or diſpoſed to an unhappy Termination, by means of polypoſe Concretions: Among theſe, the moſt conſiderable are various Diſorders of the Breaſt, ſuch as Pleuriſies and Peripneumonies, among the acute kind; and, among the chronical kind, all ſorts of Aſthmas, the ſuffocative Catarrh, the Chin-cough, the Phthiſis, and a Spitting of Blood: As for this laſt, it is certain from Experience, that, in conſequence of a Stagnation of viſcid and congeſted Blood, it eaſily diſpoſes to polypoſe Concretions, which, in their Turn, produce a Spitting of Blood; for if, by means of theſe polypoſe Concretions, the free Paſſage and Repaſſage of the Blood through the Pulmonary Veſſels is diſturbed, the Blood muſt neceſſarily be accumulated in the capillary Veſſels of the Pulmonary Artery; and at laſt, upon the breaking of ſome Ramification, expectorated by way of Spit, eſpecially in Perſons diſpoſed to an Hæmoptyſis. For this Reaſon it is no unuſual thing for Polypoſe Concretions to be found in diſſecting Perſons, who have died of Spitting of Blood: Thus, in *Hoffman's Conſult. Med. Tom.* 1. *Sect.* 2. *Obſ.* 73. we have an Inſtance of a young Man of ſeventeen Years of Age, who died of a Spitting of Blood, accompanied with a ſlow Fever; and, upon laying open his Body, there was a callous Concretion found in his Pulmonary Artery. *Bonetus*, alſo, in *Anatom. Pract. Tom.* 1. *Lib.* 2. *Sect.* 5. *de Sputo Sanguinis*, gives us an Account of the Diſſection of a Perſon who died of a Spitting of Blood, made by *Sylvius* in the Hoſpital of *Leyden*, in the Year 1664. In both Ventricles of this Perſon's Heart there was found a thick, fibrous, and, as it were, fleſhy Matter, extended into all the Veſſels running off from the Heart. But, particularly, ſuch a Concretion, above three Spans long, was extracted from the Left Jugular Vein; but this Matter, to which much grumous Blood adhered, was, in the Ventricles of the Heart, of a conſiderable Thickneſs, and, in a ſingular manner, interwoven with the fleſhy Fibres of the Heart, which its Fibrils, as it were, embraced. Beſides, in the Middle there appeared a grumous Blood, and it ſeemed to have minute Veſſels. I have, alſo, ſeen polypoſe Concretions in thoſe who have died of a Phthiſis. And *Bauhine*, as we are informed by *Georgius Horſtius*, *in Op. Tom.* 1. tells us in expreſs Words, that he almoſt always found polypoſe Concretions in thoſe who died of a Phthiſis and Dropſy. The Curious may, with reſpect to this, conſult *Needham de Formatione Fœtus*, *Cap.* 2. *Malpighius*, *de Polypo Cordis*; and *Harderus*, in *Obſ.* 45, 46, and 47.

An Aſthma, eſpecially that which is of the incurable kind, and on which depends a Dropſy of the Breaſt, is almoſt always generated and ſuſtained by polypoſe Concretions. I have often had Opportunities of diſſecting the Bodies of ſuch as have died of this kind of Aſthma; and found either Polypuſes in the Heart, and Pulmonary Veſſels, or a fetid Serum extravaſated in the Cavity of the Thorax. Nor are there wanting a ſufficient Number of Obſervations to confirm this. Thus the celebrated *Græ-vius*, a Phyſician to the Army, in his *Diſſertatio de Aſthmate Convulſivo*, informs us, that, upon laying open the Bodies of fifty Soldiers, who died of Dropſies of the Breaſt, and Aſthmas, he found Polypoſe Concretions in the Ventricles of all their Hearts. *Lanciſi*, alſo, in his Treatiſe *de Motu Cordis*, gives us the following memorable Caſe: A Man of twenty-four Years of Age, of a ſlender Habit, and accuſtomed to a groſs Air, and coarſe Aliments, was ſeized with frequent Anxieties about the Heart, and Faintings, accompanied with a violent Difficulty of Breathing, and a Refrigeration of the Extremities. His Pulſe was ſmall and unequal, and his Jugular Veins and Abdomen were ſurpriſingly tumid, till at laſt he died of a ſlow Fever. Upon laying open his Body, his Heart was found wonderfully flaccid and ſmall, with polypoſe Concretions filling both its Ventricles, and the Pericardium firmly adhering to it. More Obſervations, with reſpect to that Aſthma which is generally accompanied with a Dropſy of the Breaſt, may be ſeen in *Diemerbroeck. Anatom. Lib.* 2. *Cap.* 9. *Bartholin. Epiſt.* 2. *Cent.* 4. and *Epiſt.* 56. *Cent.* 2. *Harderus*, *Obſ.* 56. *Lower de Corde*, *Cap.* 2. *Pezoldus*, *Obſ.* 58. and 61. *Ruyſch*, *Obſ.* 19. and in the *M. N. C. Dec.* 2. *An.* 9. *Obſ.* 174. and *Dec.* 3. *An.* 2. *Obſ.* 185.

A Dropſy of the Pericardium and Thorax not only frequently accompanies an Aſthma brought on by polypoſe Concretions; but, alſo, dropſical Tumors of other Parts of the Body derive their Origin from the ſame Cauſe. Hence nothing occurs more frequently in Practice, than to obſerve a ſpaſmodic and convulſive Aſthma, ariſing from polypoſe Concretions, ſucceeded by a cachectic Habit of Body, œdematous Swellings of the Feet, and ſometimes an Aſcites; for when the Circulation of the Blood, from the Right Ventricle of the Heart, through the Lungs, to the Left Ventricle, is hindered by ſuch a polypoſe Concretion, the whole Circulation of the Blood, thro' the Vena Cava, muſt neceſſarily be rendered ſlower; and violent Stagnations by this means muſt be produced here-and-there in the inferior Parts, and particularly in the Liver, which *when obſtructed or indurated, the Blood begins* to ſtagnate in the Meſentery, and all the Ramifications of the Vena Porta: Whence the Serum, being ſecreted, regurgitates to the lymphatic Veſſels, which, when too much diſtended, are formed into Hydatids, the Breaking of which produces a fatal Extravaſation of Serum. Memorable Obſervations of this kind occur in *Rhodius*, *Cent.* 3. *Obſ.* 4. and *Peyer*, *in Hiſt. Anatom. Cap.* 6. *Wepfer*, in his *Exercitat. de Apoplexia*, informs us, that he obſerved fibrous and pituitous Concretions in the Bodies of thoſe, who, during their Lives, had been for a long time cachectic, or often afflicted with Diſeaſes. *Smetius*, *in Miſcel. Medic. Lib.* 10. gives us a ſingular Inſtance of an œdematous Tumor in both Legs, ariſing from a tenſe and ſomewhat hard Polypus, and which, reaching as far as the Thighs, formed a full and hard Tumor in the lower Belly between the Pubes and the Navel, and which at laſt filled all the Region of the Abdomen. *Bonetus*, from *Boyle*, *Obſ.* 9. makes mention of Polypuſes in the Hearts of two Women, one of whom died of a Dropſy, and the other of a Cachexy. And *Albinus*, in *Diſſert. de Polypis*, *Theſ.* 5. mentions a memorable Species of Dropſy in a Man for ſome time afflicted with a Difficulty of Breathing, Palpitations and Anxieties of the Heart, who had Tumors in his Arms, and his Veins tumid, and protuberating into Knots, in conſequence of a pretty large Polypus aſcending from the Right Auricles of the Heart into the Trunk of the Vena Cava, and ſending off Ramifications; but, in ſuch a Situation, the Dropſy infallibly proves mortal.

But, waving the farther Conſideration of an Aſthma, and of a Dropſy, which often accompanies it, we now come to inveſtigate the other Diſorders of the Breaſt, which ariſe from polypoſe Concretions. The moſt conſiderable of theſe may be juſtly accounted the ſuffocative Catarrh; for, upon laying open the Bodies of ſuch as have died of this Diſorder, polypoſe Concretions have, for the moſt part, been found to be the principal Cauſes of Death, as is obvious from *Bartholin. Cent.* 2. *Obſ.* 86. *Greiſelius*, *in M. N. C. An.* 1640. *Obſ.* 74. and *Malpighi de Polypo Cordis*; for the laſt-mentioned of theſe Authors informs us, that in all thoſe he had laid open, who died either of an Apoplexy, or of a ſuffocative Catarrh, he found callous, viſcid, and glutinous Bodies in the Heart and Brain, and frequently in both. Nor muſt we overlook a Palpitation of the Heart, which is, for the moſt part, and, when of the chronical kind, almoſt always, produced by polypoſe Concretions. But, referring the Curious to the Article PALPITATIO, we come to conſider thoſe inflammatory and highly acute Diſorders of the Breaſt, a true Pleuriſy, and Peripneumony, which often ariſe from Stagnations of the Blood, produced by polypoſe Concretions. Thus *Malpighi*, in his Treatiſe *de Polypo Cordis*, affirms, that the Bodies of pleuritic Perſons, when laid open, are found to contain a large Quantity of white Portions of concreted Matter, not only in the Præcordia, but, alſo, in the Liver and Veins. *Willis*, in his Treatiſe *de Febribus*, *Cap.* 11. informs us, that, upon laying open the Bodies of thoſe who died of Pleuriſies, the Blood has been found concreted into long Portions in the Sinuſes of the Heart, and every-where about the Cavities of the Veſſels. *Peyer*, alſo, in his *Exercitat. Anat.* mentions a Man of Sixty, who died of a Pleuriſy changed into a Peripneumony; and, upon opening his Body, there appeared in his Heart large and tenacious polypoſe Concretions, reſembling Portions of Fat.

Polypoſe Concretions prove the Cauſes of incurable Diſeaſes, not only in the Heart, and annexed Pulmonary Veſſels, but, alſo, in other Parts, eſpecially the Veins, as is obvious from Diſſections. Thus various Obſervations in *Wepfer*, *Peyer*, *Willis*, *Blaſius*, and in *M. N. C.* ſufficiently evince, that violent Cephalalgias, Apoplexies, and Deliriums, have been excited by Polypuſes found within the Jugular Veins, and in the Sinuſes of the Brain; but no Part of the Body is more diſpoſed to the Generation of Polypoſe Concretions, than the Uterus, in whoſe Veins, on account

of their winding Complication, and the conſequent ſlow Circulation of the Blood through them, ſuch Polypoſe Concretions are eaſily formed, which afterwards lay a Foundation for frequent Abortions, immoderate Hæmorrhages of the Uterus, copious Effuſions of Serum and Lymph from it, a Dropſy thereof, and Barrenneſs.

Having thus conſidered thoſe incurable Diſorders, and ſuch as cannot be cured without the greateſt Difficulty, which ariſe from Polypoſe Concretions, we ſhall now ſubjoin ſome Phenomena, by means of which it may be known, whether theſe Polypoſe Concretions are lodged in the Præcordia, where they have their principal Seat. But, among all the Signs which evince this, the moſt conſiderable are, a long-continued Palpitation of the Heart, often excited by a ſlight Cauſe, ſuch as the Commotions of the Mind, flatulent Aliments, and ſuch as render the Patient coſtive; for ſuch is the Nature of theſe things, that, by diſturbing the equable Circulation of the Blood, they produce a greater Impetus thereof to the Heart, where, being preternaturally congeſted and accumulated, on account of the obſtructing Polypus, it cannot find a ſufficient Space for expanding itſelf, but violently diſtends the Heart, and its Veſſels; by which means it produces a violent Anxiety, and convulſive Motion of the Heart, which is called a Palpitation. Immediately after this, ariſes another Sign, which is, the Inequality and Intermiſſion of the Pulſe, often accompanied with Faintings; for as the Pulſe is generally the beſt Circumſtance, by which we can judge of the Motion of the Heart, and of the Circulation of the Blood through all the Parts of the Body; ſo, if it is irregular, or plainly intermittent, it, if other Circumſtances concur, lays a Foundation for ſuſpecting, that ſome Polypoſe Concretion, by its Bulk, diſturbs, or, for ſome time, intercepts, the due Conſtriction of the Heart, and other Veſſels, on which the Circulation of the Blood depends. Nor muſt we exclude, from the Signs which manifeſt a Polypus, a frequent Obſtruction of Breathing, without a manifeſt Cauſe; a Compreſſion of the Præcordia, in conſequence of ſpaſmodic Strictures of the Breaſt, and, what moſt generally accompanies this, a fixed Pain about the Heart; for each of theſe, if they are almoſt perpetual, are palpable Signs, that the Circulation of the Blood is obſtructed by ſome foreign Body.

We now come to conſider Polypoſe Concretions in a more particular Manner, and account for their Generation and Production. Firſt, then, 'tis to be obſerved, that all Polypuſes are not of the ſame Texture, Colour, and Bulk; for ſome are found ſo ſolid, hard, and ſo compacted of Fibres, that they ſeem to reſemble ſmall Tendons; whilſt others are ſoft, compoſed of mucilaginous and thin Pellicules, and externally covered with a Membrane. Some are ſo large as to weigh a few Ounces; ſome, on the contrary, are ſmaller, and have ſometimes many pinguious Parts intermixed with them. That the Colours of Polypoſe Concretions are widely different, is ſufficiently obvious, from the various Denominations given them by Authors, eſpecially thoſe of a pretty antient Date; for ſometimes they are repreſented under the Idea of Fat, which, according to ſome, is white, and reſembles Candle-tallow; and, according to others, of a whitiſh yellow Colour, reſembling that of the heated Marrow of Bones; at other times they are ſaid to reſemble Fleſh, and at other times other Subſtances. Polypuſes alſo differ in this, that ſome of them being rooted in the Right, and others in the Left Ventricle of the Heart, ſend off more or fewer Ramifications to the adhering Arteries and Veins; as alſo, in this, that ſome are by their own Bulk ſufficient to prove mortal, by blocking up the Mouths of the Veſſels; whilſt others only produce that Effect, by being moved out of their Places.

But from ſufficiently important Conſiderations, I am induc'd to think, that the Matter of Polypoſe Concretions is ſupply'd by the more weighty, viſcid, and fixed Particles of the Chyle and Lymph, which by their Motion are eaſily united, and ſo form'd into one Maſs, as to form a fibrous and membranous Body. This is ſufficiently confirmed by various Experiments, made with reſpect to the Generation of theſe Subſtances, Thus *Ruyſch*, that incomparable Anatomiſt, in his *Theſaur. Anatom.* 6. informs us, that of his own Blood, only by ſhaking, he formed a kind of ſpurious Membrane, which was furniſh'd with many Stamina or Fibres, and ſo much reſembled a genuine Membrane, that it was univerſally believed to be the Work of Nature: And in his *Theſaur. Anatom.* 1. n. 3. he tells us, that by ſtrong Conquaſſation alone, continued for the Space of one Hour, he produced a Polypoſe Subſtance from the Blood of a newly killed Sow: Hence, we are enabled to form a diſtinct Idea of a Polypus; which may juſtly be defined, a certain ſolid, fibrous, Concretion, formed of the more viſcid Parts of the Lymph, by means of a ſtrong Motion, or Impulſe.

Tho' Polypuſes are formed in both Sinuſes of the Heart, and in the Arteries as well as the Veins, yet 'tis certain from accurate Obſervation, that they are more eaſily and frequently formed in the Right Auricle and Ventricle of the Heart, than in the Left; as, alſo, more commonly in the Veins than in the Arteries: Nor is this hard to be accounted for, ſince the Chyle, which, by means of the Subclavian Vein, is convey'd to the Vena Cava, and the Right Ventricle of the Heart, being full of groſs Particles, and moving ſlowly, eaſily depoſits its heavy Parts, by which the *Columnæ* of the Heart being embraced, one Subſtance, or Body, as it were, is produced. Then the Blood convey'd to the Veins, by means of their too weak contractile Force, circulates more ſlowly, is of a thicker Conſiſtence, and more weighty, than the arterial Blood: Hence it eaſily depoſits its thick Parts; but eſpecially, when theſe, not being intimately mixed, cohere ſlightly, they, by the Force of their Gravity, tend moſt to the Bottoms and Sides of the Veſſels. But it is otherwiſe with the arterial Blood; for, as this is not only conſiderably promoted in its Courſe, by the elaſtic Motion of the Arteries, but, alſo, in the Lungs, impregnated with an highly ſubtile aereo-ethereal Matter, and intimately mixed, by being forced through very minute Veſſels, ſo 'tis by theſe means rendered more light and red: Hence the Reaſon is obvious, why the arterial Blood is leſs fit for the Generation of Polypuſes, than that of the Veins.

Not only thoſe advanced in Years, but alſo Children and Infants are found ſubject to Polypoſe Concretions. That ſuch Misfortunes are incident to Adults, is univerſally allowed; for which Reaſon we ſhall here give a few Inſtances, in which ſuch Polypoſe Concretions have been found in Infants: Thus *Albinus*, in his *Diſſert. de Polypo Cordis*, gives us an Inſtance of a Polypus blocking up the Auricle of the Heart, in a very young Boy. *Bonetus*, in *Sepulchret. Anatomicum*, *Lib. 2. Sect.* 11. *Obſ.* 6. mentions pretty large Polypuſes found in the Sinuſes of his young Son's Heart. *Snell*, in his *Diſſertatio de Cordis Polypo*, tells us that in a Boy of ſix Years of Age, who died of an Atrophy, he found a Polypus in each Sinus of the Heart. *Dorſtenius*, in *E.A.C. Dec.* 2. *An.* 3. *Obſ.* 153. mentions four extraneous Bodies, found in the Left Ventricle of the Heart of a very young Boy; and in *E.A.C. Dec.* 3. *An.* 2. *Obſ.* 18. an enormous Polypus, found in a Youth, is deſcribed. This might be proved by a great Variety of Inſtances. 'Tis not, however, to be denied, that Adults, and thoſe pretty far advanced in Years, are more diſpoſed to the Generation of Polypuſes than thoſe who are younger; for the Blood peccant both in Quantity and Temperature is more eaſily accumulated, when the Work of Nutrition is over, than when it is carrying on; eſpecially, when, in conſequence of numerous and large Veſſels, and a diminiſhed Elaſticity of the Solids, any one is diſpoſed to a Plethora, addicted to an idle Life, without Exerciſe, or has the Misfortune of an improper Diet.

We almoſt always find Men more ſubject to Polypuſes, and the Diſeaſes produced by them, than Women; the Reaſon of which is, in my Opinion, this, that in the Female Sex, whilſt the menſtrual Evacuations are duly carried on, the Quantity of Blood is not ſo eaſily increaſed; and, in conſequence of the Laxity of the Fibres, and greater Fluidity of the Humours, or a Blood more abounding in Serum, it more difficultly happens, that the groſs Particles unite, and form themſelves into Concretions. 'Tis, alſo, to be obſerv'd, that in marſhy Places, and Northern Countries, far more die of Polypoſe Concretions, than in the hotter Climates: Which, in my Opinion, beſides the cold Air, and the more obſtructed Perſpiration, is principally, to be aſcribed to the groſs Aliments, ſuch as Sea Fiſh, coarſe Bread, ſmoked and ſalted Fleſh, from which a tenacious Chyle, full of terreſtrial Particles, and conſequently a thick Blood, is generated.

We now come to conſider the procatarctic Cauſes of Polypoſe Concretions; the moſt conſiderable of which is a Redundance of Blood; for, in conſequence of an increaſed Diaſtole of the Veſſels, under a plethoric State, the Fibres loſe their Elaſticity; by which means, the Syſtole of the Veſſels is diminiſhed, the Circulation of the Blood ſurpriſingly retarded, and a palpable Foundation for the Coheſion of the terreſtrial Particles laid. Beſides, in conſequence of this, an Obſtruction of the Veſſels happens; the great Tendency of which to the Generation of Polypuſes is ſufficiently obvious from an Experiment made by *Lanciſi*, in *Lib. de Aneuriſmatibus*, *Propoſ.* 38. where that Author informs us, that with a waxed Thread he tied a certain Ramification of the Iliac Artery of a live Dog; and that, upon cutting the Ramification, without the Ligature, about fifteen or twenty Days after, he found a Polypoſe Concretion: Nor is it difficult to account for this, ſince, by making ſuch a Compreſſion, the more tenacious and leaſt moveable Parts of the Blood, being mutually united, begin gradually to adhere to the Sides of the Veſſels, till at laſt their Bulk being increaſed, they conſtitute a thick and fibrous Subſtance, called a Polypus. But not only a Redundance, but, alſo, a Penury or Scarcity, of Blood lays a Foundation for Obſtructions, and conſequently for Polypoſe Concretions. Hence I have frequently obſerved copious and frequent Hæmorrhages ſucceeded by the ſame Diſorders, which are produced by Polypuſes; for ſince, in conſequence of the Diſtention, the Fibres are rendered more lax, and the Pores larger, they tranſmit all kinds of thick and viſcid Humours, which are fit for generating Polypoſe Concretions.

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As Length or Talneſs of Body diſpoſes to various Diſeaſes, ſo it, in a particular manner, contributes to the Generation of Polypuſes, and all the Diſorders ariſing from them; for, in tall Perſons, the perpendicular Aſcent of the Fluids is difficult: Hence, the Circulations in all the Parts of the Body become ſlower, and Stagnations and Obſtructions of the Viſcera are eaſily formed, but eſpecially of the Lungs, where the Blood circulating with Difficulty, ſtagnates in the minute Veſſels, and the ſecreted heavy Parts are, in Proceſs of Time, condenſed into a thick Maſs. If this Account of the Matter is not ſufficient, it may be ſtill farther confirmed by Experience, which teaches us, that exceſſively tall Perſons are not only inferior in Gaiety of Temper, and Strength of Body, to ſuch as are of a lower Stature, but, alſo, far more ſubject to the Diſeaſes ariſing from a ſlow Circulation, and Stagnation of the Blood, ſuch as Polypoſe Concretions, a Phthiſis, an Aſthma, and a Difficulty of Breathing.

But nothing is more injurious to the human Body, or has a greater Tendency to occaſion ſudden Death, than large Draughts, of cold Liquors, haſtily drank after any violent Commotions or Over-heating of the Body. Thus *Galen*, in his Book *de Sanitate tuenda*, juſtly thinks that ſuch a Practice induces a Cough, and Difficulty of Breathing; weakens the Brain, and excites Defluxions from it; impairs the Strength of the Stomach, and injures the Nerves; for ſuch is the pernicious Nature of Cold, that, by ſtopping the inteſtine Motion of the Fluids, it not only coagulates the Blood, but, alſo, precipitates the terreſtrial and gelatinous Parts; Hence 'tis not to be wondered at, if Obſtructions, Inflammations, and Polypoſe Concretions, ſhould be produced; which laſt may be obſerved, when Blood flowing warm from the Veins is ſuffered to fall into cold Water; or, when warm Water, in which ſuch Blood has fallen, becomes cold; for, in this Caſe, the fibrous and more heavy Part will be ſeparated and precipitated from the other, in a moſt beautiful manner. Many Inſtances might be alleged, in which the drinking cold Liquors has ſuddenly prov'd mortal.

Both Experience and Reaſon concur to evince how effectually Acids, and ſpirituous Liquors, contribute to induce violent and dangerous Coagulations of the Humours; for, according to a known Experiment, Blood which is ſufficiently fluid, when taken from the Veins, is by an Affuſion of any acid Liquor, or rectified Spirit of Wine, forthwith coagulated into an hard Maſs. Now none who accurately advert to this Circumſtance, can doubt but the ſame may happen in the human Body, tho' not in the ſame Time and Manner. But if they ſhould doubt of this, let them remember into what violent and chronical Diſorders, ariſing from Obſtructions in the Viſcera, ſuch as a Phthiſis, a Cachexy, a Dropſy, a convulſive Aſthma, and exceſſive Hæmorrhages, great Drinkers of Brandy, and ſpirituous Liquors, bring upon themſelves.

Nor are we to overlook the Affections of the Mind, eſpecially Anger, Frights, and Sorrow, which lay a ſufficient Foundation for Polypuſes, and the Diſorders ariſing from them. Without making a curious Inquiry into the latent Cauſes of ſo ſingular an Effect, we ſhall only give ſome memorable Inſtances of the Facts. Accordingly, the celebrated *Malpighi* gives us an Account of a Patient, otherwiſe ſufficiently robuſt, who, by means of a Fright, was ſeized with a great Inequality and Obſcurity of the Pulſe, eſpecially in the Left Wriſt, without any Fever, and a recurring Difficulty of Breathing. But ſoon after he expectorated by Spit, ſometimes a Portion of red Blood, and at other times a large Quantity of ſmall white Portions of Matter, not unlike Polypuſes. But afterwards his ſuperior Parts became turgid, and he was ſuffocated by the Redundance of confined Blood. *Riverius*, alſo, in *Cent.* 4. *Obſ.* 2. gives us an Inſtance of a certain Man of Diſtinction, who, having the Misfortune of a ſudden and unexpected Fright, complained of a violent Tremor of his Heart, a Difficulty of Breathing, together with an unequal and intermittent Pulſe, till he ſoon after died; when, upon laying open the Cavity of his Breaſt, the Heart, and larger Veſſels, were full; and in the Left Ventricle of the Heart were found round Caruncles, reſembling the Subſtance of the Lungs, the largeſt of which, approaching to the Size of an Hazel-nut, blocked up the Mouth of the Arteria Aorta.

Nor muſt it be forgotten, that the prepoſterous Methods of curing violent Hæmorrhages, and intermittent Fevers, by Aſtringents, Opiates, Chalybeates, and even the Peruvian Bark, greatly contribute to bring on violent chronical, and even incurable Diſorders, which are produced and ſupported by Polypoſe Concretions. And I can, after a Practice of more than fifty Years, affirm, that I have known more Miſchief done by no Medicines, than by the unſeaſonable and incautious Uſe of theſe; ſince I have ſeen, not only acute and mortal Diſorders, ſuch as Apoplexies, Epilepſies, and ſuffocative Catarrhs, but, alſo, long and chronical Diſorders, ſuch as a Phthiſis, a convulſive Aſthma, hypochondriac and hyſteric Diſorders, violent Hæmorrhages, ſlow and hectic Fevers, produced by this means. If we inquire whence ſo many Misfortunes ariſe, it is to be obſerved, that the Cauſe of theſe terrible Diſorders is principally to be ſought for, in the ſlow and retarded Circulation of the Blood and Humours through the minute and capillary Veſſels of the Body; for, by this means, the natural Secretions and Excretions, which are, alſo, made through minute Emunctories, compoſed of ſubtile Veſſels, are ſurpriſingly retarded: Hence ariſe various Stagnations in different Parts, Infarctions and Indurations of the Viſcera, together with a large Train of other Symptoms. Now if a Phyſician, in ſuch a State where there is already a Thickneſs of the Blood and Humours, and a ſlow Circulation, or where violent Spaſms ſtrongly compreſs the Veſſels, ſhould exhibit aſtringent and incraſſating Medicines, or even thoſe of the ſedative Kind, he muſt neceſſarily do his Patient a conſiderable Injury, by rendering the Diſorder more terrible. This happens the more infallibly, if the prepoſterous Uſe of theſe Medicines is too long perſiſted in: Nor can it be doubted, that ſuch Polypuſes as may prove the Cauſes of incurable Diſeaſes, may be produced by *theſe means; and I have had Opportunities, in many Diſeaſes* ariſing from this prepoſterous and empirical Method of Cure, ſometimes of prognoſticating Polypoſe Concretions, from pretty certain Signs; and ſometimes of ſeeing them, in diſſecting ſuch Patients after Death.

Thus we have conſider'd the principal Cauſes which concur to the Generation of Polypuſes: And, with reſpect to the other Cauſes, as they rarely occur, ſo they may be eaſily reduced to ſome one or other of thoſe already mentioned.

The Cure.

So obſtinate are moſt Perſons, that they rarely think of attacking the Beginning of Diſeaſes, but call for the Phyſician, and the Aſſiſtance of his Art, when, their Diſorders being increaſed by Delay, they have a near Proſpect of Death: But, by this means, they only haſten the fatal Day, which, by a ſpeedy Uſe of proper Medicines, might have been totally averted. Perſons afflicted with polypoſe Concretions are the more culpable in this reſpect, ſince it is certain from Experience, that their Cure is, at beſt, difficult and dubious, and, when the Diſorder is of long Standing, abſolutely impoſſible; for, if any Aſſiſtance is to be expected in thoſe Diſeaſes ariſing from an intercepted Circulation by means of Polypoſe Concretions, great Expedition is abſolutely neceſſary: And the principal Intentions of the Phyſician ought to be to hinder the Generation of ſuch Concretions, and to prevent their Increaſe, and injurious Effects, where they are already preſent.

Firſt, then, in order to prevent the Generation of Polypoſe Concretions, our principal Care ought to be, to dilute and reſolve the inſpiſſated Blood, and duly to diminiſh its Quantity in plethoric Habits. In order to obtain this End, nothing is of more Importance than a right Regimen, and Method of Living; for which Purpoſe let their Diet be ſpare, ſlender, and moiſtening; and let the Patient abſtain from all hard, acid, ſaline Aliments, and ſuch as afford much Nouriſhment: Let his Drink be of a proper Quality, and very thin. For this Purpoſe he may very commodiouſly uſe ſmall and pure Beer, or Spring-water, either alone, or mixed with a due Quantity of Wine, or a Decoction prepared of mild and aperient Ingredients; among which the moſt conſiderable are the Roots of Vipers-graſs and Sarſaparilla, together with *China* Root, and the Bark of Saſſafras-wood; for, by theſe means, the Purpoſes of Dilution and Reſolution will be excellently obtained. To theſe Meaſures let the Patient, alſo, add frequent Exerciſe, by which the Fluidity and equal Circulation of the Blood through all the Parts are greatly promoted. But all Perſons, eſpecially thoſe of fat and plethoric Habits, ought carefully to guard againſt violent Exerciſe ſuddenly begun, ſince, by this means, too much Blood is projected to the Lungs, where circulating ſlowly, it is eaſily coagulated. In order to prevent this, it is expedient forthwith to drink ſome warm Liquor; which is ſtill the more neceſſary, if, after the Body has been over-heated by violent Exerciſe, it is ſuddenly cooled; or, which is worſt of all, if large Quantities of any cold Liquor have been drank. Beſides, the Air the Patient breathes ought to be pure, ſerene, and temperate, neither too hot, nor too cold, nor too moiſt. But, if the Patient cannot have the Benefit of ſuch an Air, ſuch Infuſions as promote Perſpiration, have an excellent Tendency to attenuate the Fluids, and disjoin the united Molecules.

The Patient ought, alſo, to guard againſt violent Affections of the Mind, eſpecially Grief, Anger, and Frights: But if at any time a Change is induced on the Body by theſe, ſuch things are with all Expedition to be uſed, as allay violent Commotions, and render the diſturbed Circulation of the Blood again regular and equable. Thus, if the bad Effects of a ſudden Fright are to be removed, ſuch Medicines are moſt efficacious as are gently reſolvent, and promote a mild Perſpiration; becauſe, perhaps, by this means, that Part of the Maſs of Blood which

which was beginning to be coagulated, is moſt commodiouſly reſolved: For this Purpoſe I always, with great Succeſs, exhibited the *Pulvis Marchionis*, either alone, or with a few Drops of the anodyne Liquor, taken in Cinnamon-water, or Baum-water prepared with Citron-juice and Wine; after which I order ſome Cups of a warm Infuſion to be drank: And this Method I, alſo, found highly beneficial in thoſe waſted by long Grief. Beſides theſe Meaſures, in violent Frights, moderate Exerciſe is greatly to be commended; ſince by it the Heart is enabled more eaſily to free itſelf from the Quantity of Blood congeſted to it, in conſequence of which the Diſorder becomes leſs terrible. Thoſe, therefore, but ill conſult their own Advantage, who, immediately after a Fright, betake themſelves to a State of Reſt, or endeavour to fall into a profound Sleep.

Care muſt, alſo, be taken, that the Body be duly ſoluble; and, if the Patient is coſtive, Clyſters, or balſamic Pills, are, with all Expedition, to be uſed, in order to remove this Misfortune. Nor is leſs Care and Prudence requiſite, that the other Paſſages ſubſervient to the Secretion and Excretion of the Humours, be kept free and open, leſt, as it generally happens, theſe being obſtructed, the Maſs of Blood ſhould be contaminated, and rendered impure: But it ought, in a particular manner, to be the Phyſician's Care, that no natural Evacuation of Blood, ſuch as the Hæmorrhoids in Men, and the Menſes in Women, be either totally ſuppreſſed, or too long retained; for, in this Caſe, there eaſily happen dangerous Congeſtions of Blood to other Parts, which, by the ſkilful Phyſician, may be commodiouſly prevented, by proper Veneſection, Pills, and other Medicines of a gently balſamic and temperate Quality. Nor are artificial Evacuations of Blood to be neglected; but theſe are ſtill more ſtrictly to be regarded, if the Patient is plethoric, and has, by long Cuſtom, render'd them natural to him.

Having laid down theſe Rules, with reſpect to Regimen, we muſt, among the Claſs of Medicines calculated for inciding and reſolving the inſpiſſated Fluids, recommend Salts of a neutral and alcaline Nature, ſuch as the Arcanum Duplicatum, vitriolated Tartar, Nitre, the digeſtive Salt of *Sylvius*, the aperitive Salt, Oil of Tartar per Deliquium, the Terra foliata Tartari, and the Liquor of fixed Nitre. Among ſpirituous Preparations, this Intention is anſwer'd by the Eſſence of white Burnet, the *Tinctura Antimonii Acris*, and others of a like Nature. But, among all the Medicines, I know none is ſo powerful in diſſolving thoſe Parts of the Blood which are fibrous, and diſpoſed to Concretion, as mineral Waters, eſpecially thoſe which are impregnated with an alcaline Salt, and of a mild and temperate Quality; ſuch as the *Embſen* and *Selteran* Waters, thoſe of *Aix la Chapelle*, but eſpecially the *Caroline* Springs, which, by their Salt, open all the Emunctories of the Body, waſh away and evacuate the impure Sordes, and reſolve and dilute the thick and viſcid Blood.

Having already ſhewn the Method of preventing Polypuſes, we now come to inquire what Meaſures are to be taken, when there are any Signs of a Polypus already formed in the Heart, or larger Veſſels, and by what means its farther Growth may be prevented: It is, therefore, to be obſerved, that whilſt a Polypus is only beginning, and, as yet, pituitous, we are not to loſe all Hopes of reſolving it, which may be done by alcaline and neutral Salts, which excellently reſolve the viſcid Humours; by a ſlender Diet; by a ſufficient Quantity of Drink of ſuch a Nature as to dilute the Humours; but, eſpecially, by the *Caroline* Waters; by the prudent Uſe of which I have known many cured, who had ſtrong Symptoms of a Polypus formed within. But if the Polypus has already degenerated into a fibrous and hard Subſtance, all poſſible Care is to be taken, leſt, becoming bigger, or, being moved out of its Place, it ſhould totally block up the Veſſels, and ſuddenly deſtroy the Patient. For anſwering this Intention, it is of the greateſt Importance to prevent a Redundance of Blood, and to preſerve its Fluidity, by the Medicines already recommended for that Purpoſe. But, when a Difficulty of Breathing ariſes from a Polypus, we muſt by no means uſe Veneſection in the Arm, ſince, by that Practice, a greater, and even a ſuffocative Congeſtion is produced. Beſides, let the Patient avoid all ſpirituous Liquors, too much Exerciſe, and Perturbations of Mind, all which, partly by coagulating the Blood, and partly by throwing it into too violent Commotions, render the Diſorder worſe.

We ſhall now ſubjoin ſome Cautions with reſpect to the Treatment of Hæmorrhages, and Intermittent Fevers. We have already ſhewn how faulty Phyſicians are in this reſpect; for which Reaſon I ſincerely adviſe, that, in ſtopping Hæmorrhages, the Phyſician would not attempt the Cure by Aſtringents alone, but rather by a proper Evacuation of Blood, and gently anodyne Medicines; as, alſo, by Frictions of the inferior Parts, to reſtore the equable Circulation of the Blood. With reſpect to the Cure of Intermitting Fevers, the greateſt Care is to be taken, that they be not too ſoon ſuppreſſed; for which Reaſon it is expedient prudently to uſe gently aperient and evacuating Medicines; to which we may commodiouſly ſubjoin, and even interpoſe, reſolvent, temperating, and corroborating Medicines. *Hoffman.*

POLYSARCIA, πολυσαρκία, from πολὺς, much, and σὰρξ, Fleſh. Corpulence.

This is a ſuperfluous Increaſe of Fleſh, by the *Greeks* ſo called, on account of its Exceſs. It is a Diſorder directly oppoſite to that, in which Nutrition ceaſes, and in which the Body becomes tabid and conſumptive. Too large a Quantity of Nouriſhment conveyed to the Parts, is the Reaſon, why an exceſſive Quantity of Fleſh is generated, and the Patient, by that means, oppreſſed. We may juſtly reckon this to be a Species of Cachexy; for the Patients are afflicted with ſeveral terrible Symptoms, ſuch as a ſuperfluous Quantity of Fleſh, an Exceſs of prominent Fat, Slowneſs of Motion, Oppreſſion, Weakneſs, Difficulty of breathing, and Sweating upon the leaſt Exerciſe; ſo that the Patient becomes apprehenſive of Suffocation, and can hardly wear the ſlighteſt Garments. Many Phyſicians have, therefore, given Rules for diminiſhing the Quantity of Fleſh, or preventing an *Increaſe of the Body*. But their Doctrine is refuted by *Sorranus*; for, if the Habit of Body is good, a moderate Quantity of Fleſh, accompanied with Strength, is rather to be preſerved, than deſtroyed. But the *Polyſarcia* we call a Diſorder, which may be juſtly accounted a Cachexy, and is accompanied with many dangerous Symptoms; for all the Misfortunes, which attend voracious Animals, or thoſe fattened for Uſe, ſuch as Inflation, Extenſion, and Prominence of the Body, alſo, attend thoſe afflicted with a *Polyſarcia*. The like happens in ulcerated Bodies, in which the luxuriant Fleſh is either conſolidated, or ſprings up afreſh on the Lips of the Ulcers, after it has been removed.

There are two Methods of curing a *Polyſarcia*, the one by preventing too copious Nouriſhment, and which conſiſts in quick Geſtation, and the Uſe of ſuch mild Aliments, as do not nouriſh much, or have a Tendency to increaſe the Body; the other conſiſts in the Obſervation of certain Rules, and laborious Exerciſe, in order to induce a Change on the Body: But, for the ſake of Diſtinctneſs, we ſhall give more particular Directions with reſpect to the Cure. It is, therefore, expedient to exerciſe the Patient much and long, either on Horſeback, or in Coach; to order him to ſail, to read, and uſe his Voice; to wreſtle, and walk quickly, that his Legs may be the more exerciſed: He muſt, alſo, run, and have the Parts of his Body rubbed with the Hands dry, or with a rough Linen Cloth, and ſome Sand ſprinkled on the Parts; then he is to uſe various Paleſtrian Exerciſes, ſuch as that which the *Greeks* call κελαδία and *Choricomachia* (perhaps χειρομαχία); which Exerciſes are directed by their reſpective Maſters: Then he is to uſe what the *Greeks* called ὁπλομαχία, that is, a Mock-fighting with Arms: Then he is to uſe the Exerciſe of Wreſtling, which the *Greeks* called ἀτεροκοπία, or τεχνελισμός. He is, alſo, to uſe the long tractary Machine, called by the *Greeks Macro-ſparton*, and the *Italians Sphere*, and Wreſtling; as, alſo, quick, hard, long-continued, and dry Frictions; for if the Parts are rubbed with Oil, the Hands ſlip, and the Patient cannot perform his Exerciſe with due Vigour. The Patient's Body muſt, alſo, be expoſed to the Sun, a Practice which the *Greeks* call ἡλίωσις. Then a Sweat is to be excited by means of a Flame, live Coals, and dry Steams. Sometimes Hot-baths, which diminiſh the Body, and, at other times, Cold-baths, which condenſe it, are to be uſed; for the Bodies of ſuch as have uſed the Cold-bath are perceived to be thick, and, as it were, teſtaceous. It is, alſo, expedient to apply hot Sand to the Body, and to ſwim in the Sea, or in Medicinal Waters. After Sweating in the Bath, the Body muſt be ſprinkled with Salt, by which the Fleſhes of Animals are preſerved dry, denſe, and free from Withering. Then the Patient is to uſe what the *Greeks* call *zegma*, (perhaps *ſnegma*) a Friction of Nitre reduced to Powder; and, after Bathing, Meat and Drink are to be long abſtained from; for then the Appetite begins to languiſh, and its Edge is obtunded by the Delay; the Keenneſs, alſo, of the Digeſtion languiſhes, when the Fomes, which ſuſtained it, is withdrawn. Drinking before Eating is to be forbidden, and very little is to be drank at all, though the Patient may drink moſt at Meals; for, by drinking much, the Aliments are rendered fluid, the Fleſh ſoftened, and by Digeſtion, the Food is rendered capable of adhering to the Solids, and, conſequently, of increaſing the Solids: But if the Patient is afflicted with an inſatiable Thirſt, he may drink a ſmall Quantity of moderately ſharp Wine. But Puls, Alica, Flour, Milk, Nuts, the Brains of Animals, Eggs, tender Fiſhes, and all pinguious Subſtances, are to be abſtained from; but the Patient may eat Bread that is cold, fermented, and prepared with the Bran; for ſuch Bread nouriſhes but little, eſpecially if it is old. Dry Aliments are, in a particular manner, beneficial; Pot-herbs, and Fiſhes of hard Digeſtion, are to be uſed; as, alſo, the drier Sorts of Birds, and wild Aliments, ſuch as Hares,

and

and wild Goats; as, alſo, Pork long dried in the Salt. The Patient ought, alſo, to uſe but one kind of Aliment at a Meal, and keep from ſleeping a great while after it; for, by Watching and Reſtleſſneſs, the Bulk of the Body is much impaired by Exhalation; whereas it is fattened, and its Bulk increaſed, by Sleep. Beſides, the Body is, by Sleep, rendered more moiſt. Cold Liquors are to be drank, and, during the Continuance of the Polyſarcia, the Metaſyncritic Cyclus is to be begun; ſometimes the Patient is to uſe total Abſtinence, and ſometimes to take but a ſmall Quantity of Aliments and Water, which is to be regularly augmented, as the Situation requires. We are to begin the Cure by Vomiting, the Patient faſting, or by an Exhibition of proper Roots. Then the Patient is to uſe acrimonious Subſtances, Things of a neutral Quality, Birds, and wild Animals. Theſe Meaſures are the more expeditiouſly to be taken in a few Days, the more ſevere and violent the Beginnings of every Cyclus are. Diuretics are, alſo, to be exhibited among other Pot-herbs; ſuch as Aſparagus, Carrots, Parſneps, Smallage, Fennel, Leeks, and other Things of a like Nature; for by this means a Change may be induced on the Body by the Uſe of common and ordinary Aliments. We muſt, alſo, have a due Regard to the various Symptoms in the Cure of this Diſorder. Some Phyſicians recommend Phlebotomy, purgative Medicines, Clyſters, the Uſe of Venery after Bathing, and before Meals, and on the ſame Day a ſmall Quantity of Nouriſhment, and Water for Drink: They, alſo, recommend Vomiting after Supper. Some, alſo, as contrary to the *Polyſarcia*, recommend Exerciſing the Body by Pandiculation, after riſing out of Bed, which they call ἀντιπάτος; as, alſo, the Drinking Night-dew, before the Riſing of the Sun. But the Madneſs and Abſurdity of late Phyſicians is ſufficiently obvious; for, by Phlebotomy, the Strength is impaired, and the Patient's Body rendered flaccid, which the *Greeks* call ῥάκωσις. Purgative Medicines, ſuch as Clyſters, and thoſe above-mentioned, corrupt the Fluids, and induce a bad Habit of Body, by the *Greeks* called *Cachexia*. Venery, alſo, renders the Patient effeminate, and deſtroys his Strength. Some, alſo, order Bathing twice a Day, and Sleep before Meals; but this is very improper, ſince Sleep rather renders the Patient fat, than lean. Vomiting, alſo, after Supper, deſtroys the Strength; and though it diminiſhes the Fleſh, yet it fills the Head with Fumes, diſturbs the Organs of Senſation, renders the Gums putrid, corrupts the Breath, corrodes the Stomach, and renders the Patient diſagreeable to himſelf, which the *Greeks* call Δυσαρεσκησις, and which is accompanied with a State of Inequality, reſembling that of Fevers. Beſides, Vomiting is improper, and juſtly to be condemned, becauſe, by corrupting the Juices, it does more Harm to the Body. But if the Patient has eaten too large a Quantity of Aliments, then a Vomit is to be exhibited; for the Uneaſineſs ariſing from the Exceſs is greater than that produced by the Vomit. Cloſe and violent Application of Mind, alſo, contributes greatly to the Cure of the Polyſarcia; for which Reaſon we obſerve the Bodies of cloſe Students more thin and ſlender, than thoſe of Perſons who lead a lazy and indolent Life, whoſe Bodies are more full and ſolid. *Cœlius Aurelianus. Chron. L. 5. C. 11.*

POLYSOMATICA. The ſame as POLYSARCIA.

POLYSPASTON, from πολὺς, much, and σπάω, to draw. The Name of a Machine for making Extenſion, in caſe of Fractures, or Luxations. See the Article FRACTURA, and the Explication of Table XXIX.

POLYTRICHUM; ſee TRICHOMANES.

POLYTRICHUM AUREUM; ſee ADIANTHUM AUREUM.

POLYTROPHIA. Abundant Nouriſhment.

POMACEUM. Cyder.

Cyder is the Juice of Apples, made ſpirituous by Fermentation; the Apples are gathered in Autumn, when they are ripe; then they are ground in a Mill, the Juice is preſſed out, and left to ferment in Hogſheads.

There may be as many Sorts of Cyder made, as there are different Sorts of Apples. Apples that are commonly eaten, and are of a ſweet pleaſing Taſte, produce Cyder that will not keep; and therefore others are preferred for this Purpoſe. Theſe Apples are of a curious Colour, but they have an harſh, bitter, and thyptic Taſte; which makes the Cyder pungent, ſtrong, and to keep long. Cyder ought to be fine, of a curious gold Colour, having a pleaſant Smell, and a pungent ſweet Taſte.

Cyder is pectoral; fortifies the Heart and Stomach; moiſtens, and quenches Thirſt; and is looked upon to be good for ſcorbutic and melancholy Perſons. When drank to Exceſs, it occaſions Drunkenneſs of longer Continuance, more dangerous, and of more pernicious Conſequences, than is produced by Wine.

By an exact Analyſis of Cyder, a ſulphureous Spirit is firſt drawn from it, and then Phlegm; afterwards, by the Help of a great Fire, a little thick Oil is extracted, and a Spirit, which is nothing but eſſential Salt, diſſolved in the Phlegm. What remains will yield a little fixed Salt by Calcination, Lotion, Filtration, and Evaporation.

When the Juice of Apples has not been well purified, it ſoon corrupts; becauſe the Dregs, which remain mixed with the Liquor, are ſmall Pieces of the Apples, which are as ſubject to rot, as the Apples themſelves, and give the Cyder an unpleaſant rotten Taſte. In order to purify it, ſome uſe Water-glue diſſolved in Wine; and, to prevent the Cyder from growing ſour, they put Muſtard into it. Others draw off what is clear, into earthen or glaſs Bottles, which are afterwards well corked.

Apples of an harſh and bitter Taſte are beſt for Cyder, becauſe they contain much eſſential Salt, proper for ſeparating the oily Parts from the Dregs. Beſides, theſe Apples ſupply the Cyder with a ſufficient Quantity of tartarous Parts, to hinder the Spirits from evaporating; and hence this Cyder is ſtronger, more purgent, and will keep the longer. On the contrary, ſweet Apples being deficient in theſe Particulars, the Cyder made from them quickly dies.

Cyder is good and wholſome, provided it be uſed with Moderation; and may be ſaid, in general, to be better for the Health than Wine, becauſe its Spirits are not ſo impetuous, nor ſo much agitated, as thoſe of Wine; and are, beſides, detained and moderated by a great Quantity of viſcous Phlegm, which ſtill contributes to make this Liquor moiſtening and cooling. We know by Experience, that moſt of thoſe who drink nothing but this Liquor, are ſtronger, more healthy, and look better, than thoſe who drink Wine; of which Lord *Bacon* gives us a remarkable Inſtance: Of eight old People, ſays he, ſome were near, and others above an hundred, who, during their whole Lives, drank nothing but Cyder, and were ſo vigorous, that they danced and jumped about like young Men.

Cyder, drank to Exceſs, does not inoxicate ſo ſoon as Wine; but the Drunkenneſs cauſed by it continues longer, becauſe its Spirit conveys along with it, into the Brain, a great many heavy and viſcous Particles, which hinder its ſudden Diſſipation. Theſe Viſcoſities, diſperſing themſelves afterwards, into all the Subſtance of the Brain, ſtop the Chanels of the Nerves, and oppreſs the animal Spirits, in ſuch a manner, that they require ſome time to recover themſelves, and to expel that which detain'd them in a kind of Repoſe and Unactivity. Hence proceeds that Sleepineſs after Drunkenneſs.

By letting the groſs Subſtance of the Apples ferment in Water, a moiſtening and cooling Liquor, called ſmall Cyder, is made. This Liquor will not produce Drunkenneſs, and many Women in *Normandy* make it their common Drink.

Of the Juice of Pears extracted and fermented, is made a kind of Cyder, or vinous Liquor, called Perry, which, in Colour and Taſte, reſembles White-wine. Bitteriſh and harſh Pears are beſt for this Purpoſe. As the Fermentation of both Liquors is the ſame, and as the Virtues of Perry are nearly allied to thoſe of Cyder, what has been ſaid may be ſufficient.

Many other ſpirituous Liquors may be made of the fermented Juices of ſeveral Fruits; but the greateſt Part of theſe Liquors never become ſpirituous, as Wine, or Cyder, and will not keep ſo long.

The Juice of Quinces, after it has been fermented, becomes viſcous. It fortifies the Stomach, works by Urine, is good for the Colic, Spitting of Blood, Dyſenteries; and qualifies the Motion of ſharp and bilious Humours, which cauſe Evacuations upwards and downwards. As this Liquor ſoon grows ſour, and decays, they mix Honey, Sugar, or the like, with it, to preſerve it.

Ananas is a juicy and delicious Fruit, that grows in the *Weſt Indies*, whoſe Juice the *Indians* extract, and make excellent Wine of it, which will inoxicate. Women with Child dare not drink it, becauſe they ſay it will make them miſcarry. The *Ethiopians*, alſo prepare a ſort of Wine, called *Sebanſcou*, from a certain Fruit that grows among them.

Pliny ſays, that they made a Liquor in *Egypt*, which was ſomewhat ſpirituous, of the Juice of Sebetes, which produced good Effects in Perſons of a bilious Conſtitution. The Juice of Jujubes, prepared in the ſame manner, has, alſo, the ſame Virtues.

From ſome Trees they draw Liquors, which are almoſt as ſpirituous and pleaſant, as thoſe we make from Fruits. A kind of a large and ſtrait Palm-tree grows in the *Indies*, called *Coqueo*, in whoſe Branches they make Inciſions, and extract a vinous Juice, which the *Indians* call *Sura*, or *Taddi*, and from which they diſtil a good Spirit. They, alſo, make a ſort of Vinegar with this Juice, by expoſing it to the Sun: Others boil it upon the Fire, to make a ſweet Wine of it called *Orraca*.

The firſt Juice being drawn out of the Branches of the Tree, there comes out a ſecond, that is not ſo ſpirituous as the other, which they ſuffer to evaporate, in order to make a kind of Sugar of it, which they call *Jagra*.

The Fruit of this Tree ſupplies them, alſo, with a ſweet and well-taſted Liquor, which is very cooling and moiſtening.

The Birch-tree yields a Sap, which, being drank, is of an opening Nature. *Van Helmont* values it much for its Virtues in curing the Stone. Several Phyſicians, alſo, uſe it, for the

ſame Diſtemper, for the Strangury, and ſcorbutic Humours.

The Body, Branches, and Root of the Maple yield a ſweet and pleaſant Sap: This Liquor, Mr. *Ray* ſays, is more abounding in cold and rainy Weather, than in any other; whilſt the Birch, on the contrary, yields more in hot and dry Weather.

The Root of the Nut-tree, alſo, yields a Juice, which *Boyle* and *Schroder* value much, they having obſerved it to have produced good Effects in the Gout, and ſeveral other Diſtempers.

Several other Trees ſupply different Nations with pleaſant Drinks. *Lemery on Foods.*

The Countries in *England*, moſt celebrated for the Production of Cyder, are, *Herefordſhire*, *Worceſterſhire*, and *Devonſhire*. *Muſgrave* informs us, that the *Devonſhire* People are very ſubject to the Gout, which he attributes to the copious Uſe of ſtrong Cyder. I have ſometimes known an habitual Colic remov'd by an entire Change of Malt Liquor, or Wine, for Cyder, by way of common Drink.

POMAMBRA. Apples of Amber; theſe are made of odorous Powders, to which Oils may be added; and theſe Powders, being receiv'd in Wax, liquid Storax, or Mucilage of Tragacanth, with a little Turpentine, to render them tenacious, if it is neceſſary, and intimately incorporated, by an Addition of a proper Quantity of Roſe-water, or ſome other ſuch Liquor, are to be reduc'd to Balls of any Size, which ſhall be judg'd moſt expedient.

They derive their Name from Amber, not becauſe that Subſtance is always and neceſſarily an Ingredient in them, but becauſe they have a grateful Smell, and in that reſpect reſemble Amber: Thus, for a Preparation of this Kind, we may take the Odoriferum Crollianum, which is prepar'd in the following manner:

> Take of Mace, Cloves, Cinnamon, or the Caſſia Lignea, each two Drams; of Muſk, Civet, and Gum Arabic, each one Dram; and of Tragacanth dried in a Furnace, two Drams.

Let theſe two Gums be triturated with the Muſk; and, when all the other Ingredients are carefully triturated, mix the Civet with them, and add a ſufficient Quantity of Water prepar'd from the Flowers of the Orange-tree; or the Water of Damaſk Roſes, prepar'd with odorous Specifics, and Roſe-water, in which has been digeſted for eight Days a ſmall Quantity of the Carbo Paracelſi, or the Zibetta Occidentalis; all theſe are to be incorporated together.

The Carbo or Zibetta Occidentalis, ſo far as we may conjecture from the *Archidoxa* of *Paracelſus*, is nothing elſe but human Dung, or Sulphur plac'd in Digeſtion for ſome time, till, inſtead of its fetid Smell, it aſſumes one highly grateful and agreeable. See *Hartman* in *Croll.*

This Medicine may, alſo, be prepared by pulverizing the Mucilage of Tragacanth, diſſolv'd in odoriferous Water, and mixing the other Ingredients with it.

This Medicine, when applied to the Noſtrils, by its grateful Smell, conveys a brisk Motion to the Blood; and ſurpriſingly comforts the Heart in Apoplexies, Epilepſies, Colics, Suffocations of the Uterus, and Plagues.

A ſmall Quantity of it may be mix'd with expreſs'd Oil of Nutmegs, in order to make a Liniment, to be us'd in the above mention'd Diſeaſes. *Croll.*

Schroder, in his *Pharmacop.* gives three other Formulæ of the *Pomambra*; but, as they are of little Importance in Medicine, we refer the Reader to that Work without inſerting them.

POMATUM UNGUENTUM. Take of freſh Hog's-lard, three Pounds; of freſh Sheep's-ſuet, nine Ounces; of the Apples commonly called Pome-waters, pared and ſliced, one Pound nine Ounces; of the moſt fragrant Roſe-water, ſix Ounces; of Florentine Orrice-root, groſly powdered, ſix Drams; let theſe boil together *in Balneo Mariæ*, till the Apples are diſſolved; then ſtrain without Expreſſion, and keep for Uſe: Heat it then over again, and waſh the Whole with Roſe-water.

Almoſt all the officinal Diſpenſatories abound with Preſcriptions for this Ointment. The Pharmacopœia Regia has one, containing theſe Ingredients, but crouded with many more; as has the *Auguſtan* Collection, one yet more loaded; but that, alſo, gives another from *Amatus Luſitanus*, much more contracted; and from thence, likewiſe, our College ſeemed firſt to take it, but yet with a farther Abridgment of Superfluities. *Zwelfer* takes great Pains, in his Animadverſions, to teach the moſt convenient Manner of Compoſition, and Mixture of ſo many things of different Texture. But, as ſhort a Compaſs as it is reduced to here, ſeemingly to avoid theſe Difficulties, the common Practice of the Shops has of late found out a much nearer way; which is by buying it of Perſons, who make it their ſole Buſineſs to beat up freſh Hogs-lard with Roſe-water, into a kind of Curd; and ſcent it with any of the aromatic Oils, moſt ſuitable to the Liking of their Cuſtomers. *Quincy.*

POMPHOLYGODES Frothy

POMPHOLYGERON, *πομφολυγηρόν.* The Name of a Plaiſter deſcrib'd by *Paulus Ægineta*, *L.* 7. *C.* 17.

POMPHOLYX, *πομφόλυξ*, is a Bubble excited in a liquid Subſtance, by ſome flatulent Spirit, or Air, contained therein. Thus *πομφόλυγες* are expounded in *Heſychius*, *αἱ ἐν τῷ ὕδατι γινόμεναι διδήσεις, ἢ φυσήματα ὕδατος*, "Tumors ariſing on the "Water, or Swellings of the Water." Bubbles, *πομφόλυγες*, appearing on the Top of the Urine, indicate a Diſorder of the Kidneys, and that the ſame will be of long Continuance. *Hippocrates*, 7 *Aph.* 34.

POMPHOS, *πομφός.* *Πομφοὶ*, in *Galen*'s Exegeſis, are expounded, *ἐπανασάσεις τὸ δέρματος ἐχθώδεις τε ἅμα καὶ πλαδαραὶ καὶ ἐνερυθεῖς*, "ſcaly Eminences or Tumors on the Skin, which "are at the ſame time red, full of Moiſture." In the Words *Galen* ſeems to have an Eye to that Paſſage of *Hippocrates*, (*Lib.* 2. *περὶ γυναικ.*) *καὶ ἐν τῇσι κνήμῃσι πομφοὶ ἀνίσανται*, "and *Pomphi* ariſe in the Legs." The Word occurs, alſo, *Lib.* 2. *de Morbis*, where we read *καὶ καταπίμπλαται πομφῶν ὡς ὑπὸ κνίδης*, "and ſhe was full of *Pomphi* [red, watry Tumors], as "tho' ſhe had been rubbed over with Nettles."

POMUM. See MALUS.

POMUM AMORIS. See AMORIS POMA.

POMUM ADAMI. A Name for the *Limon*, *fructu Aurantii*. *Pomum Adami* is, alſo, a Name for a Protuberance in the anterior Part of the Neck, form'd by the Thyroide Cartilage.

POMUM ARENOSUM. A Name for the GUAJAVA.

POMUM CITREUM. See CITREUM.

POMUM HIERUCHUNTANUM. A Name for the *Solanum*; *ſpinoſum*; *fructu rotundo.*

POMUM SPINOSUM OPUNTIATUM. A Name for the *Melocactus*; *Indiæ Occidentalis.*

POMUM SYLVESTRE. See AGRIOMELA.

PONDO, or PONDUS. A Weight. See DRACHMA and LIBRA.

As it is neceſſary to be acquainted with the Weights us'd by different Nations, at different times, in order to underſtand their Practice, I have given Tables of the principal antient and modern Weights; and, after theſe, Table of their Meaſures.

PONGA. H. M. *Jaca minor ſylveſtris Malabarica.* D. Commelin. *Tatarsbæ Braſilienſium* Piſon. *ſimilis.* It is a tall evergreen Tree, growing in *Malabar*, and bearing no Flowers, at leaſt none which are conſpicuous; but the Fruit adheres to the Branches in the ſame manner as that of the *Jaca*; whence the *Portugueſe* call the Tree the *wild Jaca.* The Calyxes are echinated, firſt green, and afterwards rediſh, and containing Multitudes of roundiſh-oblong, acuminated, and rediſh Seeds.

A Cataplaſm prepared of the green Fruits of the Tree bruiſed, being apply'd to Tumors, potently promotes their Suppuration. Of the Bark and Root boiled in Water, is prepared a Fomentation for œdematous Tumors of the Legs, an endemic Diſeaſe among the *Indians*, and calle' by the *Portugueſe Pædo S. Thomæ*, which preſerves them from an Inflammation. *Raii H. P.*

PONGAM. See MINARI.

PONGELION *ſive Perimaram.* H. M. *Arbor Indica ſiliquoſa*, *Floribus racemoſis*, *pentapetalis*, *Siliquis foliaceis*, *ad ſingulos Flores ternis.* It is a tall large Tree, growing in ſeveral Parts of *Malabar.* The Oil, prepared of the Bark firſt bruiſed, and then boiled, being rubbed on the Body, extracts vicious Humours. The Juice which diſtils from the Tree, being drank with Butter-milk, diſcuſſes Flatulencies. The Fruit, triturated with *Manga*, and mix'd with a Decoction of Rice, being inſtilled into the Eyes, cures the Cephalalgia and Ophthalmy.

PONNA. H. M. *Prunifera ſeu Nucifera Malabarica Foliis Nymphææ*, *Fructu rotundo*, *Cortice pulvinato.* It is a vaſt Tree, thirty Yards in Height, and four in Thickneſs, bears ripe Fruit in *March* and *September*, and continues fruitful for the Space of three hundred Years; it grows in ſandy Places almoſt everywhere in *Malabar.*

From the dry'd Kernels of the Fruit they expreſs an Oil, which is uſed in Lamps, and cures Pains in the Limbs, being anointed therewith. Of the Bark of the Root macerated in Vinegar, they prepare an Extract, which, rubbed on the Head, cures the *Cephalæa.* The Tear which diſtils from the Tree, and its Fruit, being collected and exhibited, excites Vomiting, provokes to Stool, and violently purges corrupt Humours both upwards and downwards. *Raii H. P.*

Tſierou Ponna, H. M. is the *Malabarian* Cornel-tree, with Leaves like thoſe of the *Nymphæa.* This is accounted a ſmaller Species of *Ponna*, and bears Fruit like that of our Cornel-tree, in Shape, Size, and Subſtance: This Fruit is eaten by the Natives, and from its Kernels they expreſs an Oil, which is uſed in their Lamps, but is of no Service in Medicine. *Raii H. P.*

PONNAGAM, H. M. is a tall bacciferous *Indian* Tree with a ſmooth tricapſular Fruit, containing in each Capſula a ſingle Seed. It is always cover'd with Leaves, Flowers, and Fruit.

Of the Leaves and Fruit bruiſed, with Honey, is prepared a Cataplaſm, which, being apply'd, is a ſovereign Remedy for the Bite and Stings of Serpents, and other venomous Animals. The Root, bruiſed, and apply'd in the Form of a Cataplaſm to Contuſions, diſſolves the coagulated Blood, and cures the Part affected. *Raii H. P.*

Pee Tsjerou-Ponnagam, H. M. is a larger Species of *Ponnagam*, which grows to a greater Height than the former; but, in all other reſpects, is very little different from it. *Raii H. P.*

PONNAM. A Name for the *Senna*; *orientalis*; *fruticoſa*, *Sophera dicta.*

PONS VAROLII. The Name of a ſort of Arch in the *Cerebellum*, form'd by two medullary Proceſſes, call'd thus from *Varolius*, the firſt Obſerver of it.

PONTAGIA. A Term in *Paracelſus de Tartaro*, importing, as is ſaid, a Mixture of ſaline Subſtances with thoſe which are bitter, or ſtyptic.

PONTICUS, an Epithet in *Paracelſus*, expreſſive of a certain ſaline Taſte, reſembling that of Sea-water.

Pontica Vina are acid, feculent, and tartarous Wines.

Ponticum Mel is a ſort of poiſonous Honey. See ÆGOLETHRON.

POPONAX. The ſame as OPOPANAX.

POPLES. The Ham, or Joint of the Knee.

POPLITEUS MUSCULUS.

This is a ſmall Muſcle obliquely pyramidal, ſituated under the Ham; from whence it has its Name.

It is fixed above by a ſtrong narrow Tendon to the outer Edge of the inner Condyle of the Os Femoris, and to the neighbouring poſterior Ligament of the Joint. Thence it runs obliquely downward, under the inner Condyle of the Os Femoris; its flat, and pretty thick, fleſhy Body, increaſing gradually in Breadth, till it is fixed in the back Side of the Head of the Tibia, all the Way to the oblique Line or Impreſſion obſervable on that Side.

The Popliteus performs the Rotation of the Leg, when bent, in a Direction contrary to that of the Biceps. The Biceps turns the Leg from before outward; the Popliteus from before inward. This Rotation, therefore, anſwers to the Pronation of the Radius, by the Pronator Teres; as that made by the Biceps Tibiæ does to the Supination made by the Biceps of the Arm.

This Muſcle is commonly reckoned among the Flexors of the Leg; but it ſeems very ill contrived for ſuch a Function, becauſe of the Obliquity of its Situation, and becauſe its Inſertion is ſo near the Centre of Motion of the Joint. By its Connection with the Capſular Ligament, it may ſerve to prevent its being catch'd between the two Bones in the Flexions of the Leg. *Winſlow.*

POPULAGO. Marſh-marigold.

The Characters are;

The Root is perennial, the Leaves are entire and roundiſh. The Flower is roſaceous, like that of the Ranunculus, and naked. The Fruit conſiſts of a Multitude of little Sheaths inflected downwards, ſtellated, and full of many oblong Seeds.

Boerhaave mentions two Species of *Populago*; which are,

1. Populago; flore majore. See CALENDULA *Paluſtris.*

2. Populago; flore pleno. *T.* 173. *Caltha paluſtris, flore pleno.* C. B. P. 276. *Pſeudo-helleborus ranunculoides, pratenſis, rotundifolius, multiplex.* M. H. 3. 461. *Boerh. Ind. Plant. Vol.* 1.

This Plant is ſaid to be of a refrigerating Quality, like the *Nymphæa*; but it is really of a very cauſtic Nature, ſo that Cattle avoid it, tho' in the greateſt want of Graſs; but, if they happen to eat it, they are firſt ſeized with an Inflammation of the Fauces, Oeſophagus, and Stomach, and at laſt die. Hence it appears to be a very acrimonious Herb, and of the Nature of Hellebore. *Hiſt. Plant. adſcript. Boerhaav.*

POPULARIS. Endemial, or Epidemical.

POPULUS.

The Characters are;

The Leaves are roundiſh. The Flower in the male Tree is amentaceous, and conſiſts of apiculated Leaves; from the ſquamous Calyx ſhoots forth a long Axis, to which grow on every Side maſculine Floſcules ſo diſpoſed, as by their Union to reſemble a Cat's Tail; each of theſe Floſcules conſiſts of a thin, caducous Membrane, furniſhed with an hairy Margin, and, under this of another leſs caducous Membrane, from which, on the ſupine Part, ariſe eight Stamina, furniſhed with red, oblong Teſticuli: This Membrane, when mature, has its Margin indented, and adorned with a lanuginous Fimbria, or Fringe.

Boerhaave mentions five Species of *Populus*; which are,

1. Populus; alba; majoribus foliis. *Tourn. Inſt.* 592. *Boerh. Ind. A.* 2. 211. *Populus alba.* Offic. Ger. 1301. Emac. 1486. Park. Theat. 1410. Raii Hiſt. 2. 1418. Synop. 3. 446. *Populus alba* λευκη. J. B. 1. 155. *Populus alba (quæ* λευκη *ab albedine dicitur) majoribus foliis.* C. B. P. 429. THE ABELE, or WHITE POPLAR.

It delights in watry Places, and the Bark is of Uſe both inwardly and outwardly in the Sciatica, Strangury, and Ambuſtions.

2. Populus; alba; minoribus foliis. *C. B. P.* 429.

3. Populus; nigra. *Offic. Ger.* 1301. *Emac.* 1486. *C. B. P.* 429. *Park. Theat.* 1410. *Raii Hiſt.* 2. 1419. *Synop.* 3. 446. *Tourn. Inſt.* 592. *Boerh. Ind. A.* 2. 211. *Populus nigra ſive* Αἴγειρος. J. B. 1. 155. THE BLACK POPLAR.

The black Poplar grows frequently to be a large Tree, having a whitiſh Bark, and ſmooth ſhining green Leaves, growing on long Foot-ſtalks; they are broad and round toward the Bottom, ending gradually in a narrow ſharp Point. The Stalks and Leaves have frequently large Swellings or Tumors on them, made by ſmall Inſects. The Catkins are long and looſe, coming out early in the Spring. It grows by watry Places and Rivers; the Leaves and Buds are uſed.

The only Uſe that they are put to, is to make the Unguentum Populeum; but, as the black Poplar is hot, the Ointment cannot receive its cooling Virtue from thoſe Leaves or Buds, but from the other Ingredients which are put in it. *Schroder* ſays, the Women in *Germany* uſe the Buds to make their Hair grow thick and ornamental. *Miller's Bot. Off.*

The Buds of this Tree are uſed in the Ointment of Poplar; to which *Tragus* adds the Root of *Bryony*, and the Tops of the Bramble: It is very lenifying, and is uſed with Succeſs in the Inflammation of the Piles; but a good Quantity of Opium muſt be added to it. The Tincture of the Buds with Spirit of Wine, is excellent for old Looſeneſſes, and internal Ulcers; the Doſe half a Dram, or a Dram, taken Morning and Evening in a Spoonful of warm Broth. *Martyn's Tournefort.*

The Eyes, or young Buds, gather'd in *April*, are uſed in Medicine. It is diſputed whether they are of a cold or hot Quality; but the moſt probable Opinion is, that they are moderately hot. *Dale.*

POPULEON, or POPULNEUM UNGUENTUM.

Take of the freſh black Poplar-buds, a Pound and an half; the Leaves of Violets, and Navelwort of the Wall, each three Ounces; freſh unſalted Hogs-lard, cleared from its Membranes, and waſhed, four Pounds. Bruiſe, mix, and macerate theſe together; and then add the tender Tops of the Bramble, Leaves of black Poppies, Mandrake, Henbane, Nightſhade, Lettuce, the greater Houſleek, and the greater Burdock, each three Ounces. Bruiſe again, and mix all together very well; and then after ten Days ſtanding, pour on them one Pound of Roſe-water; after which boil over a gentle Fire, continually ſtirring with a Spatula, until all the ſuperfluous Humidity is evaporated; then ſtrain and ſqueeze out with a Preſs, ſo as to obtain an Ointment, according to Art.

This is originally aſcribed to *Nicolaus*. The Pharmacopœia Regia gives a Preſcription of it, as, alſo, does the *Auguſtan* Diſpenſatory; but the latter comes much the nearer to what is here retained. The new College Diſpenſatory has corrected a Miſtake, which the former Editions were liable to, in expreſſing the Houſleek to be the greater Sort, becauſe the leſſer, commonly called Stone-crop, which was liable to be put in its ſtead, is of a very oppoſite Quality to the Intention of the Medicine. *Quincy.*

4. Populus; tremula. *Offic. C. B. P.* 429. *Tourn. Inſt.* 592. *Boerh. Ind. A.* 2. 411. *Populus Libyca.* Ger. 1302. Emac. 1487. Park. Theat. 1411. Raii Hiſt. 2. 1419. Synop. 3 446. *Populus Libyca Plinii, κεγχις Theophraſti.* J. B. 1. 163. THE ASP or ASPEN-TREE.

It grows in Woods, and in moiſt watry Places; and the Leaves are ſuppoſed to agree in Virtues with thoſe of the black Poplar-tree.

5. Populo ſimilis arbor; reſinoſa altera. *C. B. P.* 430. *Tacamahaca.* Ibid. *Boer. Ind. alt. Plant. Vol.* 2.

The Bark of the Poplar is a very good Detergent, and the tender Buds are uſed by the Women in adorning and promoting the Growth of their Hair; they have, alſo, an anodyne Virtue, being externally apply'd; for which purpoſe they are an Ingredient in the *Unguentum Populeum*, ſo named from them: This Ointment is of excellent Service in the Hæmorrhoids, eſpecially if it be prepared with a good Quantity of Opium. The Tincture of the Buds is very good for an inveterate Diarrhœa, and internal Ulcers. The bruiſed Leaves are by ſome apply'd with good Succeſs in the Gout; and the Liquor, which is collected in the Cavities of the Poplar, is believed to cure Warts and the Impetigo. *Hiſt. Plant. adſcript. Boerhaav.*

PORCELLIONES. The ſame as MILLEPEDES.

PORCELLUS INDICUS. The *Guinea Pig.* The Fleſh of this Animal has not much Taſte, and is hard of Digeſtion. Some are of Opinion, that Broth prepared of it is good againſt Dyſenteries, and proper for exciting a Diſcharge of the Urine. *Lemery des Drogues.*

PORCUS MARINUS. The Sea-hog. This is a Species of Dolphin, or large oblong Fiſh, whoſe Noſe reſembles that of the Land Hog, and it digs up the Earth in the ſame Manner. This Fiſh is frequently carried up with the Tide into Rivers, and is very commonly ſeen at *Roan*, in the River *Seine*. It is of a yellowiſh Colour and very fat; its Fleſh is eaten, but is not very delicious, and is, beſides, ſomewhat hard of Digeſtion. When the Greaſe of it is melted, and perfumed with

ſome

ſome odorous Plant, it is called the Oil of the Porpoiſe, or Sea-hog. It is of an emollient, reſolvent, and anodyne Quality, and good in Diſorders ariſing from a Coldneſs of the Humours. *Lemery des Drogues.*

PORCUS. Offic. *Porcus domeſticus ſive Sus.* Raii Synop. A. 92. *Sus.* Aldrov. de Quad. Biſul. 937. Geſn. de Quad. 872. Jonſ. de Quad. 70. Charlt. Exer. 13. Schw. de Quad. 123. *Mas* Aper, the BOAR. *Fœmina* Sus, the SOW. *Fœtus* Porcellus, a PIG. THE TAME SWINE, or HOG.

The Parts of this Animal, uſed for medicinal Purpoſes, are the Lard, the Gall, the Excrement, the Lungs, the Aſtragalus, and the Bladder. As the Lard is not of a very hot Quality, it is, therefore, made an Ingredient in refrigerating Ointments, and uſed for alleviating inveterate Pains of the Loins and Joints. *Dioſcorides* informs us, that the Gall of this Animal is uſed with great Succeſs againſt Ulcers of the Ears, and of all other Parts. It is, alſo, ſaid to prevent the Growth of the Hairs. The Excrements are of an emollient and diſcutient Quality, and for that Reaſon beneficial in Itchings, Exanthematous Eruptions; Corns of the Feet, and other hard Tubercles; the Excrements of this Animal, alſo, cure the Bites of venomous Animals, and ſtop Hæmorrhages of the Noſe; the Lungs are highly beneficial, if applied to Abraſions of the Skin contracted by the Shoes. The Aſtragalus is recommended for Fractures of the Bones, as alſo for Pains of the Neck and Head. The Bladder is beneficial to thoſe who diſcharge their Urine involuntarily. *Schrod.* It produces the ſame Effects, when applied to the Pubes, and is ſaid to provoke Urine. *Pliny. Dale.*

There are two Sorts of Hogs, the wild and the tame. Of the tame Hogs, thoſe are the propereſt for Food, which are neither too old, nor too young, which are large, fat, tender, and have been well fed, as with Acorns, Maſt, Beans, Turneps, and the like.

Pork is nouriſhing Food, and renders the Body ſoluble; but it is difficult to digeſt; produces dull, viſcous, and groſs Humours; and is improper for gouty Perſons.

It contains much Oil, volatile Salt, and Phlegm.

It agrees principally, in cold Weather, with young, hot and bilious Conſtitutions; with thoſe who have good Stomachs, and are uſed to labour, and exerciſe; but it has bad Effects upon old, weak, and tender Habits.

When an Hog is about a Year old, he is gelded, and in *Latin* called *Maialis*. He then grows fatter, and the Fleſh is more juicy, and better taſted, than before. A Sow is in *Latin* called *Porca*, or *Scropha*, and not ſo much fed for Food as the Hog, becauſe its Fleſh does not taſte ſo well.

A Pig, in *Latin* called *Porcellus*, is eſteemed an excellent Diſh, and that which is neither too young, nor too old, is moſt wholſome; when too young, it abounds too much with Humidity; and, when too old, it becomes hard of Digeſtion.

An Hog is ſubject to the Meaſles, Leproſy, and many other Diſtempers, becauſe it is full of groſs Humours, and ſuch as are liable to produce the like Diſeaſes in thoſe who feed upon them.

Pork affords a Food that does not eaſily waſte, becauſe it contains oily, balſamic, and viſcous Principles, which eaſily ſtick to the Fibres of the Parts, in ſuch a manner, that they are not without Difficulty ſeparated from them. Pork is, alſo, laxative, becauſe the oily and phlegmatic Principles, with which it abounds, looſen the Fibres of the Stomach and Entrails, and dilute the groſs Humours contained in thoſe Parts.

Galen ſays, that Pork is not only better taſted, than the Fleſh of other Animals, but, alſo, that it is more wholſome. He adds, that it nearly reſembles human Fleſh, which he proves, in his third Book, and ſecond Chapter, of the Nature of Foods, by an Account of certain Perſons, to whom he ordered human Fleſh to be preſented inſtead of Pork, which they eat without being able either by Taſte, or Smell, to diſcover the Fraud. Laſtly, he aſſures us, that Pork, when well digeſted in the Stomach, affords more Nouriſhment than any other Food; and ſays, that the Athletes, or Wreſtlers, and ſuch as were inured to hard Labour, were never ſo ſtrong and vigorous, as when they fed upon Pork; and that when thoſe People, who were uſed to this Food, lived but only one Day upon the Fleſh of another Animal, and ſtill continued the ſame Exerciſes, they found themſelves weaker the next; and when they continued ſeveral Days to diſuſe Pork, their Strength ſenſibly decayed, and they became lean.

We readily agree with *Galen*, that Pork may be very nouriſhing and wholſome, for thoſe who are uſed to Fatigue and hard Labour; becauſe it is durable Food, and not ſoon waſted. But Pork in general is not wholſome, and ought to be uſed moderately; for this Animal's Way of Living is lazy and unactive, and the Filth it continually feeds upon, plainly ſhews, that its Fleſh is full of viſcous and groſs Juices, fit to produce Humours of the ſame Nature, in thoſe who eat it, to cauſe Indigeſtions, and ſeveral other Inconveniences.

Some Nations never eat Pork, as the *Jews*, *Arabs*, *Mahometans*, *Moors*, *Tartars*, and others.

If we reflect upon the Diſtempers Swine are ſubject to, indiſputably from their habitual Way of living, and their noxious Juices thence contracted, we may, perhaps, find Reaſon to admire the Legiſlator of the Jews, who forbad the Uſe of it; and to commend the Wiſdom of the Eaſtern Nations, who eſteem it their Duty to obſerve this Prohibition. It is not at all improbable, that the Scurvy, a Diſtemper to which the Northern Nations are extremely ſubject, may be excited by the habitual eating of Swines Fleſh, eſpecially when hardened with Salt and Smoke.

Aper. Offic. Schrod. 5. 268. Schw. de Quad. 54. Aldrov. de Quad. Biſul. 1013. Geſn. de Quad. 918. Jons. de Quad. 74. Charlt. Exer. 13. Raii. Synop. A. 96. THE WILD SWINE, or BOAR.

The Parts of this Animal uſed for medicinal Purpoſes, are the Lard, the Teeth, the Penis, the Gall, the Excrements, and the Urine. The Lard is poſſeſs'd of the ſame Qualities, tho' in a ſtronger Degree, with that of the tame Swine. The Teeth are exhibited as a Specific in the Pleuriſy, and are ſaid to cure the Quinſey. The Penis and Teſticles are ſaid to remove Impotence and Barrenneſs. The Gall diſcuſſes ſtrumous Swellings. The Excrements, when dried, are thought beneficial in ſtopping Vomitings of Blood, and Hæmorrhages, when applied externally. The Urine is a Specific for reſolving and expelling the Stone of the Bladder. *Schrod. Dale.*

A wild Boar that is young, fat, well-fed, and tender-fleſhed, is beſt for Food; he ought, alſo, to be hunted, and well run. This Food is very nouriſhing, and does not ſoon waſte, but is eaſier of Digeſtion than common Pork. It produces groſs Humours, and is not good for ſedentary and tender Perſons.

All the Parts of a wild Boar contain much volatile Salt and Oil. Its Fleſh is good principally in Winter, for young People of an hot bilious Conſtitution, for thoſe that have a good Stomach, and are uſed to Fatigue.

The wild Boar is ſo called, becauſe it is of the ſame Shape and Size with the tame Hog, only that it lives in Woods. It is fiercer, more nimble, and rougher briſtled, than the other; and is uſually of a black, or dark red Colour: *Pauſanias* ſays he had ſeen white ones. *Pliny* and other Authors, aſſure us, that there were no wild Boars in *Candia*, *Africa*, and the *Indies*; and *Ælian* obſerves, they had none in *Macedonia*. The *Spaniards* have found ſome in *America*, which were much ſmaller, had a ſhorter Tail, and their Feet made otherwiſe than thoſe of our wild Boars; and their Fleſh was alſo more delicate, and eaſier of Digeſtion, than ours; and they found others in ſome Places with a Pair of Horns on their Heads.

The wild Boar in *Latin* is called *Verres Sylvaticus*, and the Sow *Sus fera* or *Scropha Sylveſtris*. *Pliny* ſays, that, *Servilius Ruſus* was the firſt who introduced Hunting the wild Boar among the *Romans*.

The Fleſh of all wild Boars is not equally good. Thoſe that are pent up in Parks are inferior Food to thoſe that range at large, and feed upon Roots, Swine-bread, Corn, and Fruits.

The wild Boar is not of ſo moiſt a Nature as the common Hog, by reaſon of the Exerciſe, and different Food it lives upon; its Fleſh is, therefore, leſs viſcous, more agreeable to the Taſte, and eaſier of Digeſtion. This Fleſh is very nouriſhing, becauſe it contains oily and balſamic Juices; but it is proper only for thoſe who are of robuſt Conſtitutions, and inured to Fatigue; becauſe, being very compact in its Parts, it requires a ſtrong Stomach to digeſt it; and as Perſons who are uſed to much Exerciſe, loſe much of their Subſtance, they muſt have groſs Foods, which adhere to the Parts, and are not ſo eaſily ſpent. *Lemery on Foods.*

Porcus ſometimes imports the female *Pudenda*.

PORFILIGON. The Scales which fall from Iron upon being hammered. *Rulandus.*

PORFIRETICUM. A Braſs Mortar, or a Raſp. *Rulandus.*

POROCELE, πωροκήλη. A callous Hernia; from πῶρος, a Callus, and κήλη, a Rupture or Tumor.

POROMPHALON, πωρόμφαλον, from πῶρος, a Callus, and ὄμφαλος, the Navel. In the Definitions aſcribed to *Galen*, it is the Concretion of a Toph, or Callus, in the Navel.

POROPOEIA, ποροποιία, from πόρος, a Pore, or Paſſage, and ποιέω, to make. An Opening, or Reſeration, of the Pores, or Paſſages.

POROS, πόρος. A Pore, or Paſſage. See CUTIS, and PERSPIRATIO.

POROS, πῶρος. A Toph, or Callus. See PORUS.

POROSIS, The Generation of a *Callus*.

POROTICA, Medicines which generate a *Callus*.

PORPHYRA, See PURPURA.

PORPHYRIO. A Bird ſo called on account of its Colour, which reſembles that of Purple. It is a Water-fowl, as large as a Cock, of a bluiſh or diverſified Colour, with a large, ſharp, and purple-coloured Beak. It has a Comb on its Head; its Legs are long, and its Feet divided into five Claws; its Tail is pretty ſhort, and the Fowl itſelf feeds upon any Kind of Fiſh it can catch. Its Fat is of an emollient, reſolvent, and anodyne Quality. *Lemery des Drogues.*

PORPHYRITES. *Offic. Worm.* 44. *Charlt. Foſſ.* 20. *Boet.* 505. PORPHYRY, or RED MARBLE.

This

This is a Species of Marble highly hard, and of a red Colour; it is brought to us from the Confines of *Egypt*, the Red-ſea, and *Ethiopia*. It is thought to be poſſeſs'd of a Lithontriptic Quality, and to agree in Virtues with the OPHITES. The principal Uſe of Porphyry, in Medicine, is to levigate hard Subſtances, ſo as to reduce them to an impalpable Powder. *Dale.*

PORRACEUS. Of the Colour of Leeks.

PORRIFIGI. In Surgery, is the ſame as FICUS.

PORRIGO. A Diſorder of the Skin; the ſame as FURFUR. See LEPRA.

PORRUM.

The Characters are;

The Bulbs, or Roots, are oblong, narrow, almoſt cylindrical, and coated: The Leaves grow out of the Coats of the Roots, are plain, and ſometimes carinated.: The Flower is hexapetalous, as it were Bell-ſhaped, and adorned with broad and flat Stamina, ending in three Capillaments, the middle of which is adorned with an Apex; the Flowers are diſpoſed in almoſt globular Bunches: The Ovary becomes a roundiſh, tricapſular Fruit, full of roundiſh Seeds.

Boerhaave mentions four Species of *Porrum*; which are,

1. Porrum; commune; capitatum. *C. B. P.* 72. *Tourn. Inſt.* 382. *Boerh. Ind. A.* 2. 143. *Porrum.* Offic. Park. Parad. 512. Ger. 138. Raii Hiſt. 2. 1136. J. B. 2. 551. LEEKS.

Leeks are well known to have long, white, round Roots, with ſeveral white Fibres ſhooting from the Bottom; the Leaves are long and broad, encompaſſing the Stalk, which grows two or three Feet high, ſmooth and round, having at the Top a large, round Head, compoſed of a great Number of ſmall, greeniſh, purple, ſix-leaved Flowers. It is ſown in Gardens, and flowers in *June* and *July*; they have a ſtrong Onion-like Scent.

Leeks are more uſed in the Kitchen among Soops, and Broths, than in Medicine; they are warming and attenuating, and good to cleanſe the Lungs from tough Phlegm, and to help Shortneſs of Breath, and Stoppage of the Stomach; they are, likewiſe, reckoned good againſt the Bites of venomous Creatures. The Juice of them is uſed to diſſolve the Gums in the *Pilulæ fœtida. Miller's Bot. Off.*

2. Porrum, commune, capitatum. *C. B. P.* 72. *M. H.* 2 390. *Capite, ſphærico, minori, floſculis, & pedunculis florum, carneis.*

3. Porrum, commune, capitatum. *C. B. P.* 72. *M. H.* 2. 390 *Capite ſphærico, maximo, floſculis candidis, pedunculis florum penitus viridibus.*

4. Porrum, commune, capitatum. *C. B. P.* 72. *Capite, ſphærico, minori, floſculis albis, in pedunculis penitus viridibus. Boerh. Ind. alt. Plant. Vol.* 2.

This Plant contains a fetid, oily, volatile Salt: Whence its Bulb being bruiſed, cauſes a Diſtillation of Tears from the Eyes and Noſtrils. For this Reaſon it is proper in Caſes where Heat is required, or where an Exceſs of Heat is not feared; but is injurious to thoſe who abound too much with Blood, or whoſe Blood is of too looſe a Contexture; as when it is voided by the urinary Paſſage, by an Hæmoptoe, or by the hæmorrhoidal Veins. It provokes the Menſes, and Urine; and is very good for the Bites of Serpents, and Combuſtions. *Hiſt. Plant. adſcript. Boerhaav.*

Beſides the foregoing Species of *Porrum*, *Dale* mentions the following.

Porrum vitigineum. Offic. Ger. Emac. 176. *Porrum tonſile.* Ger. 139. *Allium ſylveſtre Amphicarpon, foliis Porraceis, floribus, & nucleis purpureis.* R. Synop. Edit. 2. p. 230. VINE-LEEKS.

They have been obſerved by Mr. *Lawſon*, to grow on the Mountains of *Weſtmorland*, and to flower in *June*. The Leaves are uſed.

Dale takes this Plant for the *Ampelopraſum* of *Dioſcorides*; the Virtues of which ſee under the Article ALLIUM, from *Dioſcorides, Lib.* 1. *Cap.* 180.

PORRUM, or PORRUS, in *Fallopius*, is a Species of rough Wart, which reſembles the Root of a Leek, on account of a great Number of Filaments on the Surface.

PORTA. See HEPAR. The Female *Pudendum* is ſometimes thus called.

PORTAIGUILLE. The Name of a Chirurgical Inſtrument. See the Explication of *Fig.* 2. and 3. of *Tab.* XXVII.

PORTATILE. In the *Collectanea Chymica Leydenſia*, there is a Preparation of Tartar, intituled, *Acetum in Sacco Portatile.*

> Take of white Tartar, half a Pound; after it is carefully waſh'd and dried, reduce it to a Powder; infuſe this Powder in ſtrong Wine-vinegar. Then dry the Powder again, and infuſe it a ſecond time in Vinegar. Let theſe Meaſures be repeated ten times, and an highly acid Powder will be obtained, which, when diſſolved in any Water, renders it acid; and this is called *Acetum Portabile*, or, *Portable Vinegar. Collect. Chym. Leyden.*

PORTORARIUM. The *Duodenum*, or the *Pylorus.*

PORTULACA.

The Characters are;

The Leaves are ſomewhat thick and ſucculent; the Calyx is monophyllous, bifid, and cloſely adheres to the Ovary; the Flower is roſaceous and pentapetalous. The Ovary in the Bottom of the Calyx becomes an oval Veſſel, conſiſting of two Shells, one within the other. Half the outer Shell, when ripe, burſts horizontally, or leaving an horizontal Opening, over the inner Shell, which afterwards flies open in the ſame horizontal Manner, diſcovering a Multitude of ſmall Seeds.

Boerhaave mentions ſix Species of *Portulaca*; which are,

1. Portulaca; latifolia; ſativa. *C. B. P.* 288. *Raii Hiſt.* 2. 1039. *Boerh. Ind. A.* 220. *Portulaca* Offic. Park. Parad. 499. *Portulaca domeſtica.* Ger. 418. Emac. 521. PURSLANE.

This Plant is well known, and has round, ſmooth, reddiſh, and ſucculent brittle Stalks, with fat, thick Leaves, round, and broader at the End, than next the Stalk. The Flowers grow on the Tops of the Stalks among the Leaves, being ſmall, five-leaved, and yellow, ſucceeded by roundiſh Seed-veſſels, including ſmall, black, rugged Seed. The Root is ſmall and fibrous. It is ſown in Gardens; the Leaves and Seed are uſed. The Seed is one of the Four leſſer cold Seeds.

The Leaves are much uſed as a Salad, being cooling, and good for the Scurvy; attempering the Heat of the Bile; and help the Strangury, Heat of Urine, and Gonorrhœa. The Seed is cooling and reſtringent, and good to kill Worms. *Miller's Bot. Off.*

2. Portulaca; ſativa; latifolia; foliis flavis. *M. H.* 2. 570.

3. Portulaca; anguſtifolia; ſive ſylveſtris. *C. B. P.* 288. *Tourn. Ind.* 236. *Boerh. Ind. A.* 220. *Portulaca ſylveſtris.* Offic. Ger. 418. Emac. 521. Park. Theat. 722. Raii Hiſt. 2. 1039. *Portulaca ſylveſtris minor ſive ſpontanea.* J. B. 3. 678. WILD PURSLANE.

It grows frequently in fallow Grounds, and by the Sides of Paths. The Herb is uſed, and agrees in Virtue with the common or Garden Purſlane.

4. Portulaca; Curaſſavica; lanuginoſa; procumbens. *Par. Bat.* 215.

5. Portulaca; Africana; ſempervirens; flore rubicundo. *H. A.* 2. 177.

6. Portulaca; Curaſſavica; folio capparidis. *Par. Bat.* 213. *Boerh. Ind. alt. Plant.*

This Plant affords an excellent Aliment and Medicine; its Parts are very ſucculent, and the Juice aſtringent, remarkably aperient, expulſive, and cooling in inflammatory Diſeaſes, and very good to waſh the Gums, when affected with a Gangrene. A Decoction of the Leaves makes an excellent Gargariſm for the Quinſey, and is no leſs ſerviceable in the Phrenſy, Pleuriſy, Peripneumony, Scurvy, and Inflammations of the Viſcera and Inteſtines; it tempers Bile, and is corroborative, eſpecially if the Plant be boiled with Whey. The Juice is ſomewhat acid, nitrous, and very viſcid: Whence it has the ſame Virtues as the *Sempervivum*, or *Nummularia*, which renders it qualify'd to correct an exceſſive Motion, or Volatility of the Spirits, a Putrefaction, and a Rigidneſs of the Fibres; whence it is of Service in all acute Diſeaſes. Being eaten in Salads in the Summer-ſeaſon, it mitigates Bile, and prevents Diſorders which may be juſtly apprehended from an Exceſs of that Humour; it deſtroys Worms, and is of Service in malignant putrid Fevers, Heat of Urine, and the Nephritis. The Leaves, applied to the Head, eaſe the Pains thereof; the diſtilled Water is very good for an exceſſive Flux of the Menſes, and for Hæmorrhages; the Juice is of great Efficacy in a Conſumption. The whole Plant is extremely full of Juice; ſo that if you compreſs and rub the Leaves between your Fingers, they will almoſt ſpend themſelves wholly in Juice; ſo that if you bruiſe a Pound of the Leaves, and ſqueeze out all the Juice, there will ſcarce remain a Dram of ſolid Subſtance. *Hiſt. Plant. adſcript. Boerh.*

Portulaca maritima. Offic. *Portulaca marina noſtras.* Park. 724. *Halimus ſive Portulaca marina.* C. B. 120. Raii Hiſt. 1. 195. *Halimus vulgaris ſive Portulaca marina.* Ger. Emac. 523. *Atriplex maritima anguſtiſſimo folio.* Tourn. Inſt. 505. COMMON SEA PURSLANE.

It is commonly found in the ſalt Marſhes, and flowers in *July* and *Auguſt*. The Leaves, and tender Branches, pickled after the manner of Samphire, are uſed by the *Engliſh* as well as the *Dutch*, in Sawces, for exciting an Appetite. *Raii Cat. Angl.* It is an hot Plant. *Magnol. Bot. Monpſ.* Mr. *Stubbs* commends it for a Coſmetic. *Dale.*

PORUS. See POROS.

PORI BILIARII. The Biliary Ducts. See HEPAR.

PORUS. *Pliny*, in the ſeventeenth Chapter of his thirty-ſixth Book, after he has ſpoken of ſarcophagous Stones, which ſoon conſume dead Bodies, which are laid in them, ſpeaks of others which have a contrary Property of preſerving them: Such, he ſays, was the *Chernites*, very much reſembling Ivory, in which it is reported *Darius* was laid; and ſuch another is the *Porus*, which, for Whiteneſs and Hardneſs, he deſcribes

ſcribes to be like the *Parian* Stones, but leſs ponderous. *Pliny* is ſo brief in his Deſcription, that we are not certain whether he ſpeaks of the Stones which we now call *Pori*. Theſe have their Name from the Multitude of their Pores, or Perforations; in Subſtances they reſemble Coral, and only differ from it in their Poroſneſs. Some of them are near akin to Coral; others are widely different from it. Thoſe of the whiteſt and cloſeſt Subſtance much reſemble Coral, and ſpread themſelves in Branches after the ſame manner; but it muſt be obſerved, that they are all white in general. Thoſe which are wrinkled have ſtriated Lines, which run along the Trunk, and even to the Extremities of the Branches lengthwiſe; and they are, alſo, furniſhed within their internal porous Subſtances with Meatuſes, which proceed according to the Longitude of the Branches, being ſeparated by the Interpoſition of a ſort of Thread. Thoſe which have Punctations in their Superficies, have their Meatus interrupted by Rays proceeding from a Centre in the interpoſed Thread to the Circumference. *Ray* from *J. Bauhine*.

POSCA. Oxycrate, that is, Vinegar and Water.

POSSE'TUM. A Poſſet. The foreign Writers mention this as a ſort of Food, or rather Medicine, peculiar to the *Engliſh*. The Serum of a Poſſet, or Poſſet-drink, appears to be an excellent Liquor, either conſidered as a Medicine, or Aliment, from what is ſaid of Whey, under the Article LAC.

POSTBRACHIALE. The METACARPUS.

POSTHE, πόσθη. The Prepuce.

POSTHIA, πόσθια. A Diſeaſe of the Eye-lids; the ſame as CRITHE, or HORDEOLUM.

POSTPOSITIO. When the Paroxyſm of an intermittent Fever comes on later than it is expected, this is called the *Poſtpoſition of the Paroxyſm*; as when it ſeizes ſooner, it is called the *Anticipation*. The firſt is eſteemed a good Sign; the latter, the reverſe.

POTABILE AURUM. See AURUM.

POTABILIS MARS. In the *Collectanea Chymica Leidenſia*, we find three Preparations of Iron under this Title, from *de Maets*. The firſt of them is thus prepared:

Take of the Filings of Iron finely triturated, and of the whiteſt crude Tartar obtained from *Rheniſh* Wine, each as much as you pleaſe; and of filtrated Rain-water, a ſufficient Quantity to form into ſmall Balls: Dry theſe Balls in the Sun, and bake them along with Loaves in an Oven. Then reduce them to a Powder again; and with a ſufficient Quantity of Rain-water, as before, form them into Balls, and again bake them in an Oven. Theſe Meaſures are to be repeated, till the Iron is found to be ſoluble in any Liquor. This Medicine is to be exhibited in a Spoonful of Rain-water. The Doſe is from ſix to ſixteen Grains, and one Scruple.

Or,

Take of the fineſt Filings of Iron, one Part; and of the Flowers of Sulphur, two Parts. Triturate them together, and add a ſufficient Quantity of Rain-water to reduce them to the Form of a Poultice. Let them ſtand in a moderately warm Digeſtion for twelve Hours. Then pour as much Rain-water upon them as riſes three or four Inches above them, and boil all together, till a yellow Tincture is extracted. When this Tincture is poured off, and filtrated, inſpiſſate it till only a fourth Part of it remains; for by this means it will in a few Days aſſume an highly red Colour.

But the moſt ſimple Method of exhibiting Iron, for removing any Obſtructions, and eſpecially for promoting the Menſes, and deſtroying peccant, acid, and auſtere Ferments, is the following:

Take of well-waſhed Filings of Iron, triturated in Alcohol, and paſſed through a fine Sieve, one Part; of the fineſt Sugar, half the Quantity; and of Mace, a fourth Part: Mix them intimately together. The Doſe of this Powder is as much as may be contained on the Point of a Knife.

POTAMOGEITON.

The Characters are;

The Root is fibrous and perennial; the Leaves are diſpoſed alternately on the Stalks, and ariſe at the Origin of the Pedicle of the ſpiked Flowers. The Calyx is tetraphyllous, the Flower tetrapetalous, and diſpoſed in Spikes. The Seeds are angulous, naked, four in Number, each ſucceeding its Floſcule. The Plant is produced in the Waters, and grows under them.

Boerhaave mentions eleven Species of this Plant; which are,

1. Potamogeiton; rotundifolium. *C. B. P.* 193. *Raii Hiſt.* 1. 188. *Synop.* 60. *Tourn. Inſt.* 233. *Boerh. Ind. A.* 196. *Potamogeiton.* Offic. *Potamogeiton rotundiore folio.* J. B. 3. 776. *Potamogeiton latifolium.* Ger. 675. Emac. 821. *Fontalis major latifolia vulgaris.* Park. 1254. POND-WEED.

This Plant is frequently found in ſtagnant Waters and Fiſh-ponds. It flowers in the Months of *June* and *July*. The only Part of it uſed is the Herb, which is of a refrigerating and inſpiſſating Quality. It is, alſo, beneficial againſt Itchings, inveterate Ulcers, and Nomæ. *Dioſco. Dale.*

This Plant receives the Name of *Potamogeiton*, from the *Greek* Words ποταμὸς, a River, and γείτων, adjacent, becauſe it grows about Fountains; *Milleſolium*, from the Smalneſs of its Leaves; and *Viola Aquatica*, from the Colour of its Flowers. *Hiſt. Plant. adſcript. Boerhaav.*

2. Potamogeiton; foliis latis; ſplendentibus. *C. B. P.* 193.

3. Potamogeiton; longo; ſerrato; folio. *C. B. P.* 193. *Lapathum, fluitans, longo, ſerrato, folio.* J. B. 2. 988.

4. Potamogeiton; foliis criſpis, conjugatis. *Tribulus aquaticus, minor, alter.* Cluſ. H. 252.

5. Potamogeiton; ſeu Fontalis criſpa; foliis alternis; caulículis compreſſis. *Tribulus, aquaticus, minor.* Cluſ. H. 252.

6. Potamogeiton; aquis immerſum; folio pellucido, lato, oblongo, acuto. *Raii Synop. C.* 1.

7. Potamogeiton; caule compreſſo; foliis graminis canini. *Raii Synop.* 61.

8. Potamogeiton; puſillum; gramineo folio; caule rotundo. *Raii Hiſt.* 190.

9. Potamogeiton; floſculis ad foliorum nodos. *T.* 233. *Milleſolium, aquaticum floſculis ad foliorum nodos.* C. B. P. 141. *Myriophyllum, aquaticum, minus.* Cluſ. H. 252.

10. Potamogeiton; foliis pennatis. *T.* 233. *Milleſolium, aquaticum, pennatum, ſpicatum.* C. B. Prodr. 73.

11. Potamogeiton; ramoſum; anguſtifolium. *C. B. P.* 193. *J. B.* 3. 778. *Boerh. Ind. alt. Plant.*

POTAMOGEITON, SALICIS FOLIO. A Name for the *Perſicaria, ſalicis folio, perennis.*

POTASH. See ALCALI.

POTENTILLA. A Name for the *Pentaphylloides; argenteum; alatum; ſeu Potentilla.*

POTERIUM. See TRAGACANTHA.

POTERIUM, ποτήριον, is, alſo, a Name for a *Malagma*, recommended by *Galen* for a Dropſy, *L.* 9. *de Comp. M. S. L. Cap.* 3.

POTIO. A Potion; a liquid Form of a Medicine, conſiſting of as much as can be drank at one Draught. The Writers on Pharmacy diſtinguiſh Potions into Cathartic, Cardiac, and Alterative.

POUST. The *Indian* Name for a baſe Kind of Opium, procured by boiling the Leaves and Stalks of the Poppy.

POUTALETSJA. The Name of a low Berry-bearing Shrub, which is very common in *Malabar*.

Of the Leaves of this Tree boiled in Milk, they prepare a Drink, which prevents Sleep, and is of Service in a Lethargy, and other ſoporous Affections. The Leaves, Flowers, Bark, Root, and other Parts boiled in Water, make a Bath, which is of Efficacy in the Epilepſy, and other ſpaſmodic Diſorders. *Raii Hiſt. Plant.*

PRÆBIUM. A Doſe; the Quantity of a Medicine exhibited at one time.

PRÆCIPITANTIA. Precipitating Medicines; that is, Medicines which moderate the Motion and Heat of the Blood, as was ſuppoſed, by abſorbing and correcting the Acid contained therein. *Præcipitans Magnum* is a Name for the *Os Sepiæ.*

PRÆCIPITATIO. Precipitation is that Proceſs, by which Particles, after having floated, and been ſuſpended ſome time in a Menſtruum, at length ſink to the Bottom. Theſe Particles ſometimes precipitate of their own Accord, but oftener by the Aſſiſtance of ſome other Liquor added to the Menſtruum. The Reaſon of the Deſcent in both Caſes is the ſame.

It may be eaſily conceived, that Fluids may be made to ſuſtain Bodies ſpecifically heavier than themſelves; by making the Reſiſtance, ariſing from the Coheſion of the Parts of the Fluids, equal to the Exceſs which there is of ſpecific Gravity in thoſe Bodies above the Menſtruum. And it has been ſhewn, that this Reſiſtance is proportional to the Surface of the Corpuſcles. Therefore a contrary Condition to this, is all that is requiſite to their being ſuſtain'd no longer; or, which is the ſame thing, to their Precipitation: That the Tenacity of the Menſtruum be not proportional to the Gravity of the Corpuſcles: And this may be produced two Ways.

In the firſt place, Precipitation generally follows upon dropping in a Liquor ſpecifically lighter: For, by this Mixture, the Gravity of the Menſtruum, which always is proportional to the compound Gravities of both Liquors, become lighter. The Menſtruum being thus diluted, the Force of Coheſion is, alſo, weaken'd, ſo that it is not able to reſiſt, or bear up, the Bodies diſſolved in

in it: Hereupon, the Equilibrium being taken off, they are precipitated by the Force of their own Gravity, juſt in the ſame manner as Hydrometers, which are eaſily ſuſtain'd in Water, upon pouring in a good deal of any inflammable Spirits, ſink to the Bottom of the Glaſs. And this does not only agree very exactly with the Laws of Mechanics, but, alſo, with Experiments themſelves. Thus Spirit of Sal Ammoniac does very plentifully precipitate the Filings of Metals, which are diſſolved in acid Menſtruums, though it be abundantly lighter than any of them. The ſame thing is done quicker by Spirit of Wine, whoſe Gravity is known to be almoſt the leaſt of any. By this Spirit, alſo, all Salts which are ſuſpended in Water, are precipitated, and afterwards unite into Cryſtals: So, if you drop in diſtil'd Vinegar the Droſs of Antimony, diffuſed in Water, it falls to the Bottom, and affords the Golden Sulphur. After the ſame manner, Water, Vinegar, *&c.* make a Precipitation from Acids, tho' more ſparingly. Acids themſelves, being poured upon others which are heavier, will precipitate whatever is ſwimming in them. Thus Spirit of Salt precipitates either Lead, Copper, or Tin, diſſolved in Oil of Vitriol. So little need is there for Alcalies in this Buſineſs, though all the Chymiſts have unanimouſly contended for them as abſolutely neceſſary.

In the ſecond place, Precipitation will ſucceed as well, if there be added an heavier Liquor to the Menſtruum: For the Particles of this Liquor, what with their Weight, and what with the Impetus they acquire in their Deſcent, carry down and ſink all the ſolid Corpuſcles they meet with in their Way: So that the Corpuſcles, being thus forced down, and kept there by this adventitious Liquor, cannot mount up into their former Situation. And, if any one has a mind to try the Truth of this Reaſoning by Experiments, there are enough to confirm it: For not only acid Spirits, but Water alone, will precipitate Tinctures of Vegetables extracted by Spirit of Wine. And the very ſame Tinctures, extracted with Water or Wine, are precipitated very copiouſly by acid Spirits, which are heavier. After this manner, Metals which are diſſolved in Spirit of Sal Ammoniac, are precipitated with Oil of Vitriol, or Spirit of Nitre. The ſame Bodies, though ſuſpended in Aqua-fortis, are eaſily precipitated with Oil of Vitriol, or Bezoartic Spirit of Nitre. And this very Oil, if poured upon Sal Volatile Oleoſum, or any other Solution of Salt, ever ſo much ſaturated, does not only ſink the ſmaller Particles, but converts almoſt the whole Liquor into Salt. For when theſe Liquors are poured upon one another, the Salts with which they abound, being put into Motion by their attractive Force, run mutually towards one another; and, becauſe they don't recoil far back after the Shock, they are at length ſo united, as to become like a Solid, there being very little Phlegm remaining. The ſame may, alſo, be obſerved in *Tartarum Vitriolatum*. In making all theſe Experiments, there happens ſuch a Conflict and Efferveſcence, as evaporates almoſt all the Moiſture, with which the Salts are diluted. And upon this depends the Rationale of chymical Coagulation, a thing of very great Conſequence in the Buſineſs of Precipitation. Nor can we account for Oil of Tartar's precipitating Bodies diſſolved in Acids, any otherwiſe than from its making a kind of Coagulation with theſe Corpuſcles, which thereby becomes too heavy for, and exceeds the Tenacity of the Menſtruum.

Nor does Coagulation ſucceed only upon the mixing of heavier Fluids, but it, alſo, very often promotes Precipitation, when the Gravity of the inſtil'd Liquor is entirely equal to that of the Menſtruum, or but very little different from it. And this Agglutination of Parts is to be ſeen in many Liquors, but moſt of all in ſaline ones. Thus Spirit of Sal Ammoniac, Spirit of Hartſhorn, that of human Blood, and Sal Volatile Oleoſum, whoſe Gravities are nearly the ſame as that of common Water, precipitate the Solution of Sublimate very plentifully, as you may obſerve in making white Precipitate of Mercury: In which Experiment, the Increaſe of the Weight gives ſufficient Indication of an Union of thoſe Salts, which are pretty copious in the Sublimate, and Liquors which are poured upon it: For that which ſubſides at the Bottom, exceeds in Weight the Sublimate which was at firſt put in. Alſo, the Magiſteries of Vegetables, extracted by Precipitation, confirm this Account of Coagulation; for theſe have a greater ſpecific Gravity than the Powders of the Plants they are made from. This additional Weight, therefore, is to be imputed to the Particles of the Liquor, with which Precipitation is performed. *Quincy.*

PRÆCORDIA. The Diaphragm. The Word, alſo, very commonly imports the ſame as *Hypochondria*, which, according to *Galen*, in *Prorrhet.* are thoſe Parts above the Navel, which on both Sides are ſubjacent to the ſpurious Ribs; for the *Epigaſtrium*, or *Abdomen*, ſays the ſame Author, *Com.* in 2 *Aph.* 35. is divided into the Hypochondrium, the Parts about the Navel, and the lower Belly, (which the *Greeks* call ἦτρον, *(Etron)* which lies between the Navel and the Pudenda [See a very accurate Diviſion of thoſe Parts under the Article ABDOMEN]. The *Præcordia*, or *Hypochondria*, then, may be more fully deſcribed, as that external Part of the Abdomen, which extends itſelf above the Navel on both Sides, from the *Ilia*, under the cartilaginous Parts called the *ſpurious Ribs*, (ſituated above the empty Places called the *Geneones*) and comprehending, in the Right Side, the Liver; and, in the Left, the Spleen. But the Word, in a larger Senſe, is uſed to ſignify all the inferior Parts comprehended within this Region, as the Stomach, Liver, Spleen, and Diaphragm; which is the Signification of the Word ὑποχονδρίων in that Sentence, 1 *Prorrh.* 56. where it is ſaid, that "Fevers proceeding from Pains of "the *Præcordia*, or *Hypochondria*, are of a malignant Nature." And let this ſuffice for adjuſting our Notion of the *Præcordia*, by which we mean that Part of the Abdomen which is ſituated above the Navel, and extends itſelf to the Right and Left under the ſpurious Ribs.

The *Præcordia* (which we ſhall henceforth in this Diſcourſe call *Hypochondria*) may be regarded, firſt, as in a State which is uſual to Perſons in Health, and is beſt for the Patient; or they may be conſidered as in a bad Condition, and unlike that of healthy Perſons; as when, for Inſtance, they are affected with Tenſions, Pains, Tumors, and Suppurations. On this Subject we may obſerve *Hippocrates* ſpeaking in his *Prognoſtics*, where he ſays, "The Hypochondria are in the beſt State when "they are free from Pain, and are ſoft and equal both on the "Right and Left Side." And he might juſtly ſay ſo; for, when the Hypochondria are in ſuch a State, we are ſatisfied, that no Part contained within their Region, as, for Inſtance, the Stomach, or Diaphragm, have received any Injury. And the good State of thoſe Parts under acute Fevers is of no ſmall Moment towards prognoſticating an happy Event; and it is impoſſible for any of thoſe Parts to be injur'd, and the *Hypochondria*, at the ſame time, to be ſoft, and free from Pain. In acute Diſeaſes, therefore, it is of extraordinary Moment towards predicting a Recovery, for the Hypochondria to appear in a very good Condition, as, when they are ſoft, equal, and free from Pain, both on the Right and Left Sides.

With reſpect to the Thickneſs or Carnoſity, and the Thinneſs or emaciated State, of the *Hypochondria*, *Hippocrates*, 2 *Aph.* 35. commends the former, in pronouncing, that, "Under "all Diſeaſes, it is better for the Parts about the Navel, and "the lower Belly, to appear thick and fleſhy; but when they "are remarkably lean and extenuated, it is a bad Sign." Whence it follows, that the *Hypochondria* when thick and carnous, have a promiſing Aſpect. But the beſt way will be for us, firſt, to procure a thorough Knowledge of the Patient's *Hypochondria*, and of the State, whatever it be, in which they uſually appear; for, oftentimes, they are perceived to be unequal, and not alike ſoft, in Perſons enjoying a good State of Health; for which Reaſon, not only thoſe *Hypochondria* which are in the beſt State, but ſometimes thoſe which are unequal and tenſe, provided they were ſo when the Patient enjoy'd Health, afford a good Prognoſtic. It is not, however, as good a Sign to have the *Hypochondria* tenſe and unequal, though it be no more than what was uſual in Health, as to have them ſoft, equal, and free from Pain. But thoſe tenſe and unequal *Hypochondria*, which are elevated into a Tumor attended with Pain, are always bad, unleſs they appear as Signs of a Criſis, at the Approach of which there is frequently a Tenſion, Tumor, or Pain, of the *Hypochondria*.

Of critical Tenſions of the *Hypochondria*, the Author of 1 *Prorrhet.* 144. thus ſpeaks: "Palpitations about the Belly, "with an oblong Tumor and Tenſeneſs of the *Hypochondria*, "indicate an Hæmorrhage." And a little after, *Text.* 147. "A Tenſion of the *Hypochondria*, with an Heavineſs of the "Head, Deafneſs, and Confuſedneſs of Sight, prognoſticate "an Hæmorrhage." *Galen*, alſo, in his third Book of *Criſes*, ſays, that a Tenſion of the *Hypochondria* without Pain is a proper Sign of an approaching Hæmorrhage from the Noſe; but when the Tenſion is accompanied with Pain, it is no Prognoſtic of an Hæmorrhage, but indicates an Inflammation. Hence we infer, that a Tenſion of the *Hypochondria* without Pain, and ſometimes, from the great Degree of Tenſion thro' the Redundance of the Blood, with Pain, a Dulneſs of the Sight, or Scintillations ſtriking on the Eyes, an Heavineſs of the Head, with a Redneſs, or high Colour, of the Face, are all critical; and, in particular, are Signs of an approaching Hæmorrhage from the Noſe: For which we have the Authority of *Galen*, *Lib.* 3. *de Criſibus*, *& Lib. de Præſag. ad Poſthumum*, and the Author of the *Prorrhetica*, *Lib.* 1. *&* 2. But a Tenſion of the *Hypochondria*, accompanied with a Coma, Anxiety, and Pain of the Head, are Signs of the Parotides, according to the Author of the *Coac.* 289. And *Hippocrates*, *Lib. Prognoſt.* teaching us to prognoſticate future critical Abſceſſes from Tenſions of the *Hypochondria*, ſays, "That an Inflammation about "the *Hypochondria* is ſucceeded by an Abſceſs in the inferior "Parts;

" Parts; but if the *Hypochondria* be ſoft, and free from Pain, " you may expect an Abſceſs in the ſuperior Parts of the Body." Hence it plainly appears, that even a Tenſion of the *Hypochondria* is ſometimes very good and ſalutary, as it is an Indication of an approaching critical Evacuation.

We may reaſon in the ſame manner with reſpect to *Tumors* of the *Hypochondria*, though rarely any good Event may ſeem to be prognoſticated from Tumors in thoſe Parts. *Hippocrates*, however, in his *Prognoſtics*, ſpeaking of thoſe Tumors, ſays, " That ſoft Tumors, which are free from Pain, and yielding " to the Touch, remove the Criſis to a greater Diſtance of " Time, and are leſs to be dreaded." And more plainly to the ſame Purpoſe, a little after, he ſays, " Soft Tumors, in- " dolent, and yielding to a Preſſure with the Finger, are ſlower " in coming to a Criſis, and leſs dangerous." Again, in the ſame Book, he tells us, that " Tumors of the Belly are leſs diſ- " poſed to form Abſceſſes than Tumors of the *Hypochondria*, " and Tumors below the Navel leaſt of all; but an Hæmor- " rhage may be expect d from the ſuperior Parts." And, *Coac.* 290. " A Tumor of the *Hypochondria*, ſucceeded by a great " or full Reſpiration, and an high Fever, in bilious Patients, " occaſion the Parotides;" becauſe in ſuch Conſtitutions the bilious Humours take their Courſe upwards.

There are, alſo, Pains of the *Hypochondria*, which are critical; as, when they are occaſioned by a Redundance of Blood diſtending the Veſſels: The Signs concomitant, and indicating a Criſis, are, as we ſaid before, an high Fever, an Heavineſs of the Head, or Deafneſs, or Dimneſs of Sight, or a Redneſs of the Face. To this we may add, that Pains of the *Hypochondria* are not bad, when ſucceeded by a Fever. Of theſe Pains we find *Hippocrates*, 6 *Aph.* 40. thus pronouncing: " They " who are afflicted with Pains about the *Hypochondria*, with- " out an Inflammation, are relieved from them by the coming " on of a Fever." And, *Coac.* 281. we read, " That Pains " and Tumors of the *Hypochondria*, if recent, and not attend- " ed with an Inflammation, meet with a Solution from Rum- " blings ariſing in thoſe Parts, and eſpecially from their Erup- " tion together with Diſcharge by Stool and Urine."

Of Abſceſſes affecting the *Hypochondria*, the Author of the *Coac.* 281. pronounces, that, " As to thoſe which break out- " wardly, it is beſt, that they ſhould be con racted into a very " ſmall Space, and to a very ſharp Head." And, continuing to ſpeak of the ſame Abſceſſes, he ſays, " For thoſe which tend " inwardly, they are to be accounted the ſafeſt, which ſhew no " outward Mark of themſelves, neither by Tum r, nor Pain, " nor Colour; but the contrary to theſe are of the worſt " Kind."

The *Hypochondria*, in acute Diſeaſes, tenſe, hard, pained, and unequal, are bad, as we are taught by *Hippocrates* in the *Prognoſtics*; and the ſame Author, 2 *Aph.* 35. paſſes a like Judgment on a remarkable Emaciation or Extenuation of thoſe Parts. But, in order to a clearer and more diſtinct Notion of theſe Diſorders, which affect the *Hypochondria*, and are all of them bad Prognoſtics, if attended with other bad Signs, we ſhall chooſe to treat of them all ſingly, and of their Cauſes, before we inquire what Prognoſtics may be formed from them; for without a juſt Idea of thoſe Diſorders, and ſome Knowledge of the Cauſes from whence they proceed, we ſhall never be able, with any tolerable Certainty, to form Predictions from them.

We ſhall begin, then, with a Tenſion of the *Hypochondria*; which Diſorder is ſometimes accompanied with a Tumor, and an Hardneſs which reſiſts the Touch. Sometimes there is a Tenſeneſs of the Parts without a Tumor, in ſuch a manner, that though they appear diſtended, yet they are empty; and ſuch Tenſions as theſe, are what *Galen* calls *empty*, *ſoftiſh*, and *tumorleſs Tenſions*. *Hippocrates* has ſometimes Occaſion to ſpeak of theſe Tenſions, as in 3 *Epid. Ægr.* 2. where he ſays of *Hermocrates*, that " He had a ſoft Tenſion of the *Hypochon-* " *dria*." Sometimes he calls thoſe Kinds of Tenſions ὑπολαπάρους, " ſoftiſh;" and the *Hypochondria* thus affected, μετεωρα, " elevated;" as he does in the Caſe of *Eraſinus*, 1 *Epid. Ægr.* 8. In ſuch Caſes there is indeed a Tenſion of the *Hypochondria*, but ſuch a Tenſion as is empty, and free from any hard Tumor. As to their Figure, theſe Tenſions are ſometimes oblong, according to that of the *Muſculi Recti Abdominis*; ſometimes broad, and ſometimes round like a Creſcent, in which Shape Tumors of the Liver are repreſented.

A Tenſion of the Hypochondria is attended with an Hardneſs, or an hard Tumor, from an Inflammation affecting either the Muſcles, or the convex or gibbous Part of the Liver, or the Spleen, or even the Stomach. There is, alſo, a Tenſion without Hardneſs, as from a Repletion of the Muſcles with a flatulent Spirit; and a Tenſion with an Hardneſs, but no Tumor, as from a Redundance of Blood in the Veſſels. A Tenſion without Hardneſs is, alſo, without Pain, as is frequently obſerved, where a copious Hæmorrhage from the Noſe ſucceeds; a Tenſion from a Flatus is without Hardneſs, and without Senſe of Weight; a Tenſion from a Redundance of Blood is attended with both; and, laſtly, a Tenſion from an Inflammation is attended with a Tumor, if an Inflammation affects the external Part of the Muſcles, or the convex Part of the Liver, or the Spleen, or the Stomach. And this is the Doctrine of Tenſions in general. But we think ourſelves obliged to be more explicit, becauſe it has been ſaid, that a Tenſion of the Hypochondria, attended with an Hardneſs, proceeds from an Inflammation of the Viſcera before-mentioned; whence we may be inclined to conclude, that this kind of Tenſion is always from the ſame Cauſe. This, indeed, is true; for all Tenſions, attended with a Tumor, or Hardneſs, and Pain, indicate an Inflammation of the Viſcera: Yet it is as true, according to the Doctrine of *Galen*, that there are ſeveral Sorts of Tenſions, which are not hard, but ſoft, or, as the ſame Author explains it, void, empty, and ſublime; and theſe Tenſions may not be accompanied with an Inflammation of the Viſcera; for which Reaſon they deſerve our more accurate Examination. Thoſe Tenſions, then, which are ſoft, or empty, or tumorleſs, which Words all ſignify the ſame thing, are cauſed either by an Inflamnation of the internal Parts of the Viſcera, or by a Drineſs in the Origin of the Nerves, which ſupply the Diaphragm. Hence the Hypochondria are attracted upwards, and, on that account, are ſometimes, by *Hippocrates*, call'd properly μετεωρα, " ſublime." In this Caſe the Hypochondria are, indeed, diſtended; but the Inflammation being ſeated in the internal Parts of the Viſcera, remote from our Notice, there is no concomitant Tumor, nor Hardneſs. *Galen*, in 3. *Epid. Com.* 2. *Text.* 1. tells us, that " a " ſoft Renitency of the Hypochondria indicates an Inflammation " of ſome Part of the Viſcera, as the Liver, Diaphragm, or " Spleen." And the ſame Author, on 1 *Epid.* treating of the Tenſion which affected the Hypochondria of *Silenus*, ſays, that " through an Inflammation of the Diaphragm, the Hypo- " chondrium, by virtue of its Continuity, was attracted up- " wards, and diſtended, without a Tumor." Again, on 3 *Epid.* ſpeaking of this kind of Tenſion, he has theſe Words: " As if he " (*Hippocrates*) had ſaid, the Right Hypochondrium was diſ- " tended, but without a Tumor, either becauſe the Inflam- " mation of the Liver was not great, or affected only the loweſt " Parts, by which it is united to the Belly; the gibbous Part " thereof, in Conjunction with the inferior Parts, being not as " yet elevated into a Tumor:" And this was the Caſe of *Hermocrates*. The Hypochondria, then, may be affected with a Tenſion of a ſoft kind, that is, without a Tumor, from an Inflammation of the Diaphragm, Spleen, or Liver, provided this laſt-mentioned be not wholly nor violently affected, but in a ſmall Degree, or only in its lower Parts; whence the gibbous or convex Part of the Liver being free from an Inflammation, the Tenſion will feel ſoft to the Touch, and appear without a Tumor; but this Sort of Tenſion will never happen, when the Liver is either wholly or violently inflamed.

It was ſaid before, that ſuch a ſoft kind of Tenſion may proceed, not only from an Inflammation of the Viſcera, but from a great Drineſs. *Galen*, *Com. in Prognoſt.* 27. comprehends both theſe Cauſes under the following Expreſſion: " Sometimes, ſays he, there is a Tenſion of the Hypochon- " dria without an Inflammation, properly ſo called, either from " an immoderate Drineſs, not only in the Parts themſelves, " but in the Diaphragm or Pleura; or from an Inflammation " with a Tumor affecting the Muſcles of the Hypochondria, " without an Inflammation, properly ſpeaking, which is a Tu- " mor attended with a Pain." And thoſe Cauſes of a ſoft Tenſion are expreſſed yet more plainly by the ſame Author, *Com.* 2. in 3 *Epid. Cap.* 4. where he ſays, " There is a Tenſion " of the Hypochondrium, when the adjacent Parts are attracted " by the Diaphragm; and there is a Tenſion of the Dia- " phragm itſelf in a Pleuriſy, ſometimes from a violent Inflam- " mation of the Pleura, ſometimes from a Retraction of the " Nerves belonging to the Diaphragm towards the Origin of " the Nerves, and ſometimes from an Inflammation of the Part " itſelf."

Having ſaid thus much of the Cauſes of a Tenſion of the Hypochondria, we proceed to inquire, what may be predicted from it. And here we are told by *Hippocrates*, in *Prognoſt.* " That an hard and painful Tumor in both the Hypochondria, " or only in the Right Hypochondrium, is a very bad Pro- " gnoſtic; for ſuch Tumors, appearing in the Beginning, ſig- " nify, that Death is not far off." *Galen*, commenting on this Place, by Tumor underſtands an Inflammation of the Liver, Stomach, or Spleen, which often proves mortal in a ſhort time, eſpecially when violent; tho' our Prognoſticating from this Symptom muſt be confirmed by other pernicious Signs. But when the Tumor proceeds from an Inflammation of the Muſcles, it is ſeldom accounted mortal. And *Hippocrates* himſelf, a little afterwards, ſeems to limit the Judgment he had paſſed on hard and painful Tumors of the Hypochondria, in ſaying, that their

Appearance

Appearance in the Beginning prognoſticates. Death in a ſhort time, in ſuch a manner, as if none but great Tumors, and thoſe not always, portended ſo fatal an Event, by ſaying, "Whenever, therefore, a Tumor (thus circumſtanced) is painful, hard, and large, it ſignifies, that the Patient is in Danger of dying in a ſhort time;" as if he had ſaid, Thoſe Kinds of Tumors, that is, Inflammations of the Viſcera, if they prove mortal at all, deſtroy the Patient in a ſhort time; for if they continue long, they indicate a Suppuration, rather than Death; agreeably to that of *Hippocrates*, delivered a little before, where he ſays, "If the Fever continues above twenty Days, and the Tumor ſubſides not, the Diſeaſe changes to a Suppuration." Tumors, therefore, of the Hypochondria, attended with Pain, and not proceeding from an Inflammation of the Muſcles, but of the Liver, or Stomach, are dangerous, eſpecially if the Inflammation be violent.

But our Prognoſtications in theſe Caſes will be confirmed by the Pathognomonic Signs of theſe Inflammations, which indicate their Nature, and, if pernicious, portend a fatal Event. Such were the Signs obſerved by *Hippocrates* in *Apollonius*, 3 *Epid. Sect.* 3. *Ægr.* 13. of whom he ſays "that he was afflicted with Want of Sleep, and a bad kind of Inflation; had a great Thirſt; laboured under a Coma, with a Tumor of the Right Hypochondrium, attended with a Pain; that his extreme Parts, on all Sides, were ſomewhat refrigerated; talked a little irrationally; forgot all he had ſaid; and was delirious."

No leſs dangerous are ſoftiſh Tenſions of the Hypochondria without a Tumor, ſince, as we have ſhewn, they indicate either an Inflammation of ſome one of the principal Viſcera, or a very great Drineſs of the Origin of the Nerves which deſcend to the Diaphragm, or of the Pleura. But theſe Tenſions, it is to be obſerved, though always bad, never of themſelves portend Death, but only in Conjunction with other bad Signs appearing at the ſame time; for not all who labour under an Inflammation of the Liver, Stomach, or Diaphragm, die. It will be neceſſary, therefore, to conſult the reſt of the Signs; and if theſe, too, are bad, and of the Number of thoſe which are fatal, we may ſafely venture to predict the Death of the Patient. Thus fatally circumſtanc'd were the Tenſions obſerved in *Silenus*, *Hermocrates*, *Philiſtes*, the young Man of *Melibœa*, and the young Man who lay in the *Forum Mendacium* [επι ψευδεων αγορῃ] who all, as you may read in the firſt and third Books of the *Epidemics*, had this ſoftiſh Tenſion of the Hypochondria, attended with other bad and deadly Signs.

On the ſame account Pains of the Hypochondria, attended with the aforeſaid Tenſion, and other bad Signs, are uſually mortal. Thus it was in the Caſe of the Wife of *Dromeades*, 1 *Epid. Ægr.* 11. who, on the third Day, was ſeized with a Pain of the Hypochondria; and made thick, turbid Urine, which had no Settlement; and had cold Sweats; which were all mortal Signs. And, *Ægr.* 12. it is related, "that a certain young Man, being feveriſh, went to Supper, and drank pretty freely; at Night he vomited up all, and was ſeized with an high Fever, attended with a Pain of the Hypochondrium, and a ſoftiſh Phlegmon tending inwardly; and he had a troubleſome Night; his Urine, at firſt, was red and thick, and depoſited no Sediment; his Tongue was very dry, but he was not very thirſty." All theſe were very pernicious Signs, and very fatal to the Patient, who died on the eleventh Day. The Author of the 1 *Prorrhet.* 56. ſays, "that Fevers, proceeding from Pains in the Hypochondria, are malignant." But *Galen* ſays, that all Fevers from the Hypochondria are not malignant, ſince there are ſeveral Parts ſeated therein; but only ſuch as are excited by an Inflammation of the Diaphragm, Stomach, and Liver; nor are even theſe all malignant, nay, perhaps, not ſo much as acute, ſo far are they from Malignancy: Thus *Galen*. But the Malignancy of acute Fevers is to be demonſtrated from other bad Signs. It may be added, that thoſe Kinds of Tenſions and Pains are bad and mortal, if they continue long attended with ſome pretty copious Evacuation. Of theſe it is ſaid, *Coac.* 284. "that Pains ariſing in the Hypochondria are bad in every Circumſtance, but eſpecially if accompanied with a Looſeneſs." This appears from the Caſes of the Sick, to which we juſt now referred; particularly that of *Silenus*, 1 *Epid. Ægr.* 2. who laboured under a Tenſion of the Hypochondria, accompanied with thin blackiſh Stools: And in the Caſe of *Eraſinus*, *Ægr.* 8. who had a painful Tenſion of the Hypochondria, attended with Sweats.

We have ſpoken enough on the Subject of Predictions from bad Tenſions of the Hypochondria; and proceed to ſpeak of Suppurations affecting the ſame Parts, which are bad, if attended with a great Looſeneſs, Nauſea, Syncope, Vomiting; and worſt of all, when the Fever is not at all remitted, nor the Patient relieved thereby. We ſaid before, that Tumors, which continue long with a Fever, paſs into an Abſceſs, or Suppuration, on the Authority of *Hippocrates*, who, in his Prognoſtics, ſays, "That, if the Fever holds the Patient above twenty Days, and the Tumor does not ſubſide, there is a Converſion into a Suppuration;" and a little after, "If the Fever goes beyond the Bounds of ſixty Days, and the Tumor, in that time, does not ſubſide, it indicates a Suppuration, both in this Caſe, and, alſo, when the Tumor affects any other Part of the Abdomen." Of the Prognoſtics, which may be drawn from theſe Kinds of Suppurations, the Author of *Coac.* 281. treats, where he ſays, "Among mortal Abſceſſes are to be eſteemed thoſe which break inwardly; but, of thoſe which break outwardly, the moſt laudable take up the leaſt Space, and gather to the ſharpeſt Head. Of thoſe Abſceſſes, which tend inwardly, the beſt are thoſe which ſhew no outward Marks of any Tumor, Pain, or Heat; but the contrary to thoſe are very bad." Hence we learn to know bad Suppurations; and that, to be ſenſible of a Tumor, Pain, or Heat, in the Hypochondria, is an Indication of a latent and not elevated Inflammation. If, therefore, this Tenſion of the Hypochondria continues after the Suppuration, without in the leaſt relaxing, it is a pernicious Sign; but if there be, alſo, a Pain and Heat, it is a worſe and more fatal Prognoſtic; but there is the greateſt Reaſon for predicting the Death of the Patient, when a copious Evacuation of Pus gives him no Relief; and when he finds himſelf the worſe after ſuch Excretions, his Caſe is eſteemed deſperate. For ſuch an Evacuation is one of theſe critical Symptoms, which determine nothing, and, conſequently, are fatal; and the more ſo, if attended with a Decay of Strength, or ſome other bad Sign.

Theſe are the Predictions we have Reaſon to make from a Suppuration in the Hypochondria; but, before we conclude this Diſcourſe, it will be fit to obſerve, that *Hippocrates*, in his *Prognoſtics*, tells us "That if there be a Pulſation in the Hypochondria, it indicates a Diſorder of the Reaſon, or a Delirium." But, in this Caſe, we are to obſerve the Eyes of the Patient; for, if he frequently moves his Eyes, and caſts his Looks from Place to Place, Madneſs is to be expected; agreeably to that in *Coac.* 282. "A Pulſation in the Hypochondria, with a Perturbation or Diſorder of the Senſes, portends a Delirium; and the more, if it be attended with frequent Motions of the Eyes." And ſuch an Event ſeems probable, either from an Inflammation of the Diaphragm, or an Effervеſcence of the Humour, by which a Multitude of Flatulencies are generated; which, aſcending in great Quantities to the Head, by heating and ſtimulating the Membranes of the Brain, excite a Delirium. This Pulſation of the Hypochondria is generally bad; though ſometimes good, when it precedes a Criſis; in which Caſe it is diſtinguiſhed from a bad Pulſation by critical Signs. But when a Pulſation in the Hypochondria is attended with other bad Signs, it ought to be eſteemed a mortal Prognoſtic; agreeably to *Coac.* 283. where we read, that "A Cardialgia, [καρδιης πονος] attended with a Pulſation of the Hypochondria, and a Fever, in which the external Parts are refrigerated, is bad, both on other accounts, and the more, if it be attended with an EPHIDROSIS" [See that Word]. And let this ſuffice to be ſpoken concerning Predictions from good or bad Hypochondria. *Proſper Alpinus de Præſag. Vit. et Morb. Ægrot.*

PRÆCURSORES, in *Paracelſus*, are the Signs of an approaching Diſtemper.

PRÆDICTIO. A Prediction; that is, a Prognoſtic.

PRÆFOCATIO. A Suffocation. It is applied to hyſteric Fits.

PRÆFURNIUM. The anterior Part of a Chymical Furnace, by which Coals are conveyed to the Grate, or Fireplace.

PRÆGNATIO. Impregnation.

PRÆLINGUA. The anterior Part, or Tip, of the Tongue.

PRÆLUM. A Preſs, in Pharmacy, for the Expreſſion of Oils and Juices.

PRÆNOTIO. A Prognoſtic, or Foreknowledge.

PRÆOPINATIO. An Uncertainty in the Mind of a Phyſician, in prognoſticating the Event of a Diſtemper.

PRÆPARANTIA MEDICAMENTA. Preparing Medicines; that is, ſuch as prepare the morbid Humours, and diſpoſe them to ſeparate from the healthy, and paſs off by the Help of Evacuants.

PRÆPARANTIA VASA are the Spermatic Veſſels.

PRÆPUTIUM. The Prepuce, or Foreſkin. See GENERATIO.

PRÆSAGIA. Preſages.

Three Things principally contribute to render a Phyſician perfect: The firſt is, that, from accurate Obſervations, he be able to trace and inveſtigate the Origins and Cauſes of Diſorders, in order to oppoſe them in their Beginnings by proper Remedies; or that, knowing theſe Cauſes, he

may give ſalutary Precepts for preventing their Effects: The ſecond is, that he accurately know the various Natures of Diſeaſes, and their Differences, with reſpect to different Conſtitutions, that he may be the better capable of diſcovering Medicines proper and adequate for removing them. The third is, that he may be able to form a right Judgment concerning the Event of Diſorders; as, alſo, concerning the Operation and Effects of Medicines. But though this laſt does not contribute directly to obtain the End of the Healing Art; yet it is certain, that it greatly promotes the Certainty of Medicine, and the Reputation of the Phyſician. For this Reaſon *Hippocrates*, in the very Beginning of his *Prænotiones*, ſpeaks in the following manner: "It is, in my Opinion, moſt expedient for the Phyſician "to form a Prognoſtic; ſince, when he declares, not only "what is paſt, preſent, and to come, but, alſo, what eſcapes "the Patient himſelf, he muſt, by theſe very means, procure "the greater Confidence and Truſt." And in *Prorrhetic. Lib.* 2. *Sect.* 3. he tells us, "That the Phyſician ought to be "mindful of this; that, if his Prediction ſucceeds, he will be "admired by the Patient; whereas, if he fails in his Progno-"ſtic, he will be hated, if not looked upon as a Madman." But this exalted Art of Prognoſticating is ſo difficult, uncertain, and precarious, that we find, from Experience, the moſt ſagacious Phyſicians have failed in it; ſince we often ſee the Patient die, of whoſe Recovery they were certain. *Hippocrates* confeſſes this, and pronounces all Prognoſtics in acute Diſeaſes fallacious. In conſequence of this Difficulty in forming Prognoſtics, the moſt ſagacious Phyſicians have placed Medicine among the conjectural Sciences; and the Vulgar have not only deemed the ſalutary Art uncertain, but, alſo, deſpiſed its Profeſſors.

But, though no Part of Medicine is incumbered with more Difficulties, than the Prognoſticating Art, yet I do not deſpair to reduce it to the Form of a Science, and to eſtabliſh it on certain general Axioms, and even Definitions; provided we aſſume what is neceſſary for this Purpoſe: But we ſhall firſt inquire into the Cauſes which may have ſo long hindered this Part of Medicine from being eſtabliſhed into a Science. The moſt conſiderable, therefore, of theſe Cauſes is a Defect of Obſervations; for, as accurate Obſervations, and Hiſtories of Diſeaſes, are the firſt Foundation of Medicine, from which we learn whatever happens in Nature, what Effects are produced in this or the other Diſorder, and what Changes are induced on human Bodies by particular Subſtances; ſo ſuch Obſervations ſupply us with the Circumſtances, the Matter and Opportunity of forming right Prognoſtics. The Phyſician, who duly compares theſe Things, and has a ſufficient Knowledge of Natural Philoſophy and Anatomy, is able accurately to inveſtigate the true and adequate Cauſes of what is paſt, preſent, and to come; from which he can afterwards form a right Judgment of the Danger of a Diſeaſe, and tell, whether it will terminate in Death, or Recovery. But, as the Antients drew their Prognoſtics, not from entire Hiſtories of Diſeaſes, but from particular Circumſtances, Numbers of which are collected by *Hippocrates*, and others, who have trod in his Steps, ſo it is not ſurpriſing, that they ſhould rarely anſwer, but frequently prove fallacious. Beſides, as the Antients wanted a rational Medicine, neither underſtood the true and genuine Natures and Cauſes of Life, Diſeaſes, and Death, and were groſly ignorant of the Structure of the human Body, and the various Motions depending upon it; ſo they could not, even from the fulleſt and moſt circumſtantial Obſervations, deduce the true Cauſes and Signs of the future Event of a Diſeaſe, with reſpect to Death, or Recovery: Much leſs could they comprehend and account for the different Operations of Medicines. Hence it is obvious, that the Antients treated, not only this, but all other Parts of Medicine, in an empirical manner. Thus, for Inſtance, if any one laboured under an acute Fever, and died under a particular Train of Circumſtances, and if this happened for ſeveral times, they forthwith laid it down for a Rule, that theſe Symptoms were Signs of Death. But, becauſe theſe Symptoms vary very ſurpriſingly, according to the Diverſity of Patients, Diſeaſes, Countries, and Seaſons, hence numberleſs Precepts are laid down, eſpecially by the Antients, which rarely hold good; ſo that *Hippocrates* confeſſed, that the Prognoſtics, with reſpect to Life and Death, were very uncertain in acute Diſeaſes.

That this Art of Prognoſticating may receive more Advances, and, in time, find a Place among the Sciences, all Circumſtances are to be carefully conſider'd, and adverted to, in the Progreſs or Hiſtory of the Diſeaſe: Nor is it ſufficient to know the Diſeaſe, and its Cauſes, ſince, in order to form a right Prognoſtic, it is abſolutely neceſſary the Phyſician ſhould have a perfect Knowledge of the Conſtitution of the Patient; for it is of great Importance, to know the Age and Strength of the Patient, the State of his Viſcera, the Condition of his Blood and Humours, his previous Method of Life, the Seaſon of the Year, whether his Body is ſtrong or weak, and whether his nervous Syſtem is diſpoſed to anomalous and ſpaſmodic Motions. It is, alſo, neceſſary the Phyſician ſhould know the ſeveral Stages of the Diſeaſe, in which certain particular Symptoms happen: He muſt, alſo, inquire in what Method the Cure has been carried on, that thus he may know, whether any Error has been committed by the Patient, or by any other Phyſician. From theſe Things, duly conſider'd, he is to form a Judgment, what Signs or Symptoms, under theſe or other Circumſtances, in this or the other Patient, prognoſticate a ſalutary, or a fatal Event: For it often happens, that a particular Symptom of the ſame Diſeaſe proves fatal to one Patient, and not ſo to another. Thus we frequently obſerve, that when infirm and old Perſons, thoſe waſted with Hunger, or previous Diſeaſes, or long Grief, are ſeized with a Fit of the Stone or Colic, they generally die under the ſlighteſt Train of Symptoms, which ſeem to portend no Danger, and which are eaſily ſupported by the Robuſt and Vigorous. In acute Diſorders, the ſame is, alſo, obſervable: Thus, in acute Fevers, thoſe who are of a ſlender Habit, and whoſe Parts are exquiſitely delicate and ſenſible, are racked with violent Pains, Anxieties, Watchings, a Delirium, and inſatiable Thirſt, and yet eſcape; whereas, when thoſe who are of a ſpongious Habit of Body, or whoſe Strength is impaired, are ſeized with the ſame Kind of Fever, they do not complain of any great Uneaſineſs, Pain, or violent Heat; yet die delirious, in the Height of the Diſorder, upon the leaſt external Refrigeration. The Stages of the Diſorder are, alſo, of great Importance in forming a Judgment of its Symptoms: Thus it is certain, that an Epilepſy, eſpecially in Children, often happens without any Injury, in the Beginning of the Small-pox; whereas an Epilepſy, in the Height of this Diſeaſe, infallibly proves mortal. In the Beginning, alſo, of the Small-pox, a Phrenitis is in young Perſons often obſerved to be without Danger; but, if it ſeizes the Patient about the ninth or tenth Day, it is a certain Sign, that Death is not far off: For this Reaſon, in forming Prognoſtics, all Circumſtances are duly to be ſeparated, diſtinguiſhed, and conſidered: Hence *Hippocrates*, in his *Prorrh.* juſtly adviſes Phyſicians to Caution, as in all the Parts of Medicine, ſo more particularly, in forming Prognoſtics; for a Phyſician in no manner opens the Mouths of People againſt him, and expoſes himſelf to Contempt, more effectually and ſhamefully, than by falſe and ill-founded Predictions; eſpecially when a Patient is left for irrecoverable, and afterwards recovers; or, when the Patient dies, though the Phyſician was abſolutely certain of his Recovery: For I have known ſome Phyſicians affirm, that their Patient would not die, when a few ſucceeding Hours have put an End to their Lives.

Thus, though the Prognoſticating Art is very difficult, yet the Phyſician ought to do all he can, to have ſome certain Signs and Marks of future Recovery, or Death, which, in my Opinion, may be obtained; for it is certain, that all Events, whether with reſpect to Life or Death, proceed from certain adequate Cauſes, without which they cannot happen. If, therefore, the Phyſician thoroughly knows the Cauſes why a Patient muſt neceſſarily die by a Diſeaſe; and if he obſerves theſe Cauſes in the Patient, by their uſual and infallible Signs; he may certainly, from their Preſence, predict and foretel the Event they will produce. In the ſame manner, if a Phyſician knows in what Manner, at what Time, by what Ways or Excretions, a Diſeaſe is terminated, and the Patient recover'd; from the Preſence of theſe Circumſtances, he may confidently and reaſonably predict future Health. We muſt, alſo, condemn the Practice of thoſe Phyſicians, who, in the Beginning or Progreſs of a Diſeaſe, before they either have, or can have, certain Signs, either of Health or Death, raſhly form a Prognoſtic, with reſpect to its Event: For we are by no means, from the Beginning of a Diſeaſe, to form a Judgment of its End; for a Diſorder which begins gently, and proceeds mildly, often rages with Violence, when arrived at its Height.

I am not of Opinion, that a Phyſician can, in the Beginning or Progreſs of a Diſeaſe, form a Prognoſtic, either with reſpect to the Life or Death of the Patient, as the Vulgar believe, and, therefore, demand a ſatisfactory Anſwer from the Phyſician. I aſſert, however, that both in acute and chronical Diſorders, there are certain Signs and Marks by which we may both foreſee and predict a fatal, or a ſalutary Event; but, before we can do this, we muſt wait for the Times in which theſe Signs diſcover themſelves. Beſides, it is one thing to pronounce a Diſeaſe dangerous, and another to prognoſticate future Death; for the former may be conjectured at, even in the Beginning of the Diſeaſe, from the Nature and Strength of the Patient, and the Genius of the Diſeaſe; whereas the latter cannot be prognoſticated, except when the true Signs of Death are preſent. But, before we conſider the Signs by which we may be ſure of a future Death, in any violent and dubious Diſorder, we ſhall give a Theory of Death, and inveſtigate its true Cauſes, that what we are afterwards to advance, may be the better underſtood.

As the Antients were entire Strangers to ſolid Reaſoning in medicinal Affairs, ſo it would be to no Purpoſe to endeavour from their Works, to diſcover wherein the Nature and Eſſence of Death conſiſts; for they aſſert nothing more, than that Life conſiſts in a due Temperament of the innate Heat, and the radical Moiſture; and Death in the Extinction of theſe: But as theſe Words convey no clear Idea to the Mind, ſo nothing ſolid or ſatisfactory can be deduced from them: But after, in our Times, by the Study and Contemplation of Nature, and by a careful Diſcovery of the Structure of the human Body by Anatomy, Light and Truth began to diffuſe their genial Rays on Medicine, and the Circulation of the Blood was diſcovered, the Reaſons and Cauſes of Life and Death can no longer remain in the Dark; for as by the conſtant and free Circulation of the Blood and Humours, the Body, in itſelf ſubject to Putrefaction, is preſerved from every Degree of Corruption, all the Actions, whether natural or animal, remain entire, and Vigour is imparted, both to the Mind and Body; ſo, when this Circulation is totally deſtroy'd, we obſerve, that the Force of the Mind and Body is cancel'd, all their Functions ceaſe, and the Body itſelf is forthwith converted into Putrefaction: Hence we underſtand, that Death is preſent, when the Circulation of the Blood is ſo effectually ſtopped, that it can by no Means or Art be reſtored. Now, as this Circulation of the Fluids depends on the Motion, Impulſe, and Tone of the Heart, Arteries, and all the Veſſels furniſhed with nervous moving Fibres, ſo the Cauſe of Death is only to be ſought for in a total Deſtruction of the Pulſation of the Heart and Arteries, and an effectual Abolition of the Motion of the Thorax, ſo ſubſervient to Reſpiration. We now come to explain, how in Diſeaſes theſe Motions of the Heart and Thorax are totally intercepted.

The Seats, therefore, of Diſeaſes, and, conſequently, the Cauſes of Death, can in no manner be more accurately inveſtigated, than by Anatomy, or the Inſpection of Carcaſes: Now, upon laying open Carcaſes taken off by any Diſorder, the evident Cauſes of the Patient's Death are forthwith ſubjected to our Senſes; for whether the Patient has died of an acute, or a chronical Diſorder, a putredinous Corruption of ſome Part or other, accompanied with an highly fetid Smell, is always obſerved; for always, in ſome of the nobler internal Parts, either in the Stomach and Inteſtines, or within the Brain, and its Membranes, or in the Liver, Uterus, Kidneys, Spleen, or Lungs, there is a certain putrid and ſphacelous Corruption, hardly tolerable on account of its fetid Smell; and this is found to proceed either from a Stagnation or Inflammation of the Blood, which, in acute Diſorders, produces Death; or from a Stagnation and Extravaſation of the Blood and Humours into the principal Cavities of the Body, ſuch as the Head, Thorax, or Abdomen. This laſt principally happens in chronical Diſeaſes, where the Viſcera, eſpecially in the Thorax and Abdomen, are found corrupted by extravaſated Pus, or Serum. Upon diſſecting the Bodies of thoſe who have died of any violent Diſorder of the Head, an Apoplexy, for Inſtance, or a Lethargy, there is always an inflammatory and ſphacelous Stagnation of Blood, in the Meninges, obſerved: The like happens in thoſe who die of violent Diſorders of the Breaſt; for in Patients taken off by a profound Pleuriſy, or Peripneumony, the whole vaſcular Compages of the Lungs is found infarcted and obſtructed, by corrupted Blood. In Patients who die by a Phthiſis, the Lungs are found full of purulent Tubercles, or a great Part of them are corrupted, and corroded with Pus. In convulſive Aſthmas, a large Collection of Water in the Thorax generally deſtroys the Patient; and in a ſuffocative Catarrh, which ſoon proves mortal, there is a Collection of Blood or Serum in the Bronchia of the Lungs, which hinders the free Ingreſs and Egreſs of the Air. In inveſtigating the Cauſes of Death, in thoſe Diſorders which have their Seat in the Abdomen, we find in a Cachexy and Dropſy, that the Liver and Omentum are indurated, or corrupted by a large Extravaſation of Serum. In the Morbus Niger of *Hippocrates* the Spleen is generally large, infarcted, and corrupted, whilſt, at the ſame time, there is an Extravaſation of Blood in the Cavity of the Stomach and Ileum. In thoſe who die of violent Iliac Paſſions, Colics, Choleras, Dyſenteries, and Cardialgias, the Parts of the Stomach and Inteſtines, are found inflamed, ſphacelated, and corroded, ſo as to diffuſe an highly fetid Smell. The Patient who dies of a violent Pain ariſing from a Stone firmly impacted in one of his Ureters, has his Stomach principally inflamed, the Kidneys, and urinary Ducts and Paſſages, being at the ſame time affected, and corrupted. In ſuch Diſorders of the Uterus as prove mortal, the Womb is either inflamed, exulcerated, ſphacelated, or corrupted by extravaſated Serum.

As for acute Diſorders, the moſt conſiderable of which are Fevers, which deſtroy ſo many in the Flower of their Age, and are ſo unfriendly to the human Conſtitution, they prove fatal in no other manner than by an Inflammation, which terminates in a Sphacelus of the internal Parts, eſpecially of the Stomach, Inteſtines, and Meninges; for theſe Phenomena are univerſally obſerved in thoſe deſtroyed by Fevers. Poiſons of every kind prove mortal by a ſphacelous Inflammation, eſpecially of the Primæ Viæ, which, upon opening the Patient immediately after his Death, is ſubjected to the Senſes; ſo that ſuch an Inflammation is, among all others, the moſt certain Sign of having taken Poiſon. In Patients deſtroyed by Worms, the Inteſtines are viſibly corroded and inflamed. From all which I think it ſufficiently obvious, that Death cannot readily happen, without the Putrefaction and Corruption of ſome internal Part; ſo that Putrefaction may be juſtly ſaid to be highly unfriendly to Life, and fatal to Mankind; for, as the Putrefaction of the human Body quickly ſucceeds a total Deſtruction of the Circulation of the Blood, ſo it is generally the adequate, true, and almoſt perpetual Cauſe of Death, and which attacks either the external Parts, though rarely, or, which happens moſt frequently, thoſe of the internal Kind; ſo that we may truly affirm, that hardly a Patient among a thouſand dies without a Sphacelus: Only we muſt except ſuch as die violent Deaths, and thoſe who are ſuddenly taken off by a Polypus blocking up the Mouths of the Veſſels. But, in all other Subjects, when opened after Death, a fetid Putrefaction, highly ungrateful to the Smell, is perceived.

But though the Cauſes of Death are moſt evidently diſcovered, by diſſecting Perſons after Death; yet we muſt here give a Caution, not to confound the Cauſes of Death with the Cauſes of Diſeaſes, which we ſee frequently done: For I have obſerved, that ſeveral Phyſicians, when a Patient dies of a dangerous Diſorder, immediately order his Body to be laid open; and, when the internal Parts are found ſphacelated and corrupted, they ſhew them to the By-ſtanders, and inform them, that the Patient could not poſſibly be ſaved, in conſequence of ſo violent a Diſorder, thus manifeſtly confounding the Cauſes of his Death, with the Cauſes of his Diſeaſe; whereas it ought principally to be conſider'd, whether thoſe Cauſes which produced Death, might not, by proper Meaſures, taken in due Time, have been prevented. By theſe means they endeavour, artfully, to palliate and cover their Errors, if they have, poſſibly, committed any. Since, therefore, the Nature and Eſſence of Death conſiſts in a putrid Corruption; hence we may juſtly infer, that the Phyſician, who intends to preſerve his Patient, ought carefully, by proper means, to prevent and remove this ſphacelous Corruption, which always proceeds from a Stagnation of the Humours, and ſtrictly forbid him the Uſe of every thing which can, in the leaſt, promote ſuch a Putrefaction.

But, that we may more accurately conſider this Subject, and be able, from certain Signs and Marks, to foreſee and predict ſuch a future Corruption, we are to inveſtigate the Cauſes by which it is generated in the human Body: For as no Effect in Nature is produced without certain and adequate Cauſes, ſo, we may affirm, that there are certain Cauſes of this Corruption, from which, when preſent, a right Prognoſtic is to be deduced. But, before we attempt an Explication of theſe Cauſes, we ſhall briefly ſhew, why Putrefaction is ſo unfriendly to the human Conſtitution, that a ſlight and gentle Sphacelus, in a ſmall Part of the Stomach and Inteſtines, is ſufficient to deſtroy the Patient ſuddenly. This, therefore, in my Opinion, happens in the following manner: The Circulation of the Blood; on which depends the Soundneſs of all the Functions of the Body, is ſupported by the Impulſe, Strength, and moving Force of the Solids. But this depends not, as ſome imagine, on any immaterial Being, but, rather, on the highly ſubtile Fluid of the Blood and Nerves, and its Influx into theſe Parts, as is ſufficiently obvious from this Experiment, that when the Nerve, or Artery, which runs to any Part is tied, or cut, all Senſation, Motion, and Nutrition, are deſtroyed in that Part. Beſides, that the Strength of the Parts depends on ſome material Principle, is certain from this, that, by Hunger, Strength is impaired; but immediately reſtored by the Exhibition of proper Aliments. Now there is nothing in Nature ſo prejudicial, and which ſo ſoon deſtroys Strength, as Putrefaction; as we obſerve in a Sphacelus, or in an exulcerated Cancer, which ſoon deſtroys, not only Strength, but Life. It is, therefore, certain, that Putrefaction conceived in the Body, eſpecially when it increaſes and diffuſes itſelf, intimately mixes its malignant Vapour, principally with the nervous Parts, and moving Fibres; and being highly unfriendly to the Fluid, which is the Origin of the Motion of the Solids, it corrupts it, as it were, extinguiſhes the Syſtole and Diaſtole of the Heart, and totally deſtroys the Tone and Motion of the Fibres.

In Diſeaſes there are, therefore, two Methods by which Death is brought about; one of theſe is ſudden and precipitate, and this is produced by violent Conſtrictions of the nervous Parts, which either ariſe from Inflammations, and ſometimes,

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in the Vigour of the Diſeaſe, generate freſh inflammatory Stagnations, which tend to a Sphacelus, and the Death of the Patient, which principally happens in Fevers, and acute Diſorders: The other Method is more ſlow, and happens gradually, from a Corruption of the Viſcera, and a Stagnation and Extravaſation of the Humours; and this principally happens in chronical and long-protracted Diſorders. As for Death, in acute Diſorders, or Fevers, it generally proceeds from violent Spaſms, which bring on an Inflammation of the Stomach, Inteſtines, or Membranes of the Brain, together with a mortal Corruption; for Spaſms are univerſally hurtful, and unfriendly to the Conſtitution, becauſe they direct the Motion of the Blood and Humours from the Circumference of the Body to the internal Parts, and obſtruct the ſalutary Secretions, ſo neceſſary to Life and Health. Beſides, ſuch is the Force and Power of Spaſms, that they hinder the free Circulation of the Blood, in which the very Eſſence of Health conſiſts; and, by rendering its Motion unequal, produce Congeſtions of Blood in the nobler Parts, eſpecially in the Head, Stomach, and Inteſtines, which, if not ſurmounted by Nature, by means of an happy *Diſcuſſion* and *Reſolution*, infallibly bring on Corruption and Death: For in every Commotion of Nature, or Fever, there are two Kinds of Motions, which ought to be duly adverted to, and carefully diſtinguiſhed from each other. The one is highly pernicious, and performed from the Circumference to the Centre: This is that ſpaſmodic, and always morbid Motion, which tends to the Deſtruction of Nature, and the vital Motions, and diſcovers itſelf by Coldneſs, Rigor, Horror, Anxiety, and a ſmall and weak Pulſe. The other is of the ſalutary Kind, ſucceeds the Spaſms, is contrary to them, directed from the Centre to the Circumference, and diſcovers itſelf by Heat, and a briſk and ſtrong Pulſe: And this is, as it were, the Medicine of Nature, which frees the Body from Deſtruction, and by means of which theſe ſpaſmodic Strictures are reſolved, the inflammatory Stagnations diſcuſſed, and the excretory Ducts, before cloſed up and conſtricted, happily open'd. This is tha Motion which the Antients called *the healing Power of Nature*, by the Efforts of which Diſeaſes are ſubdued, the Patient recovered, and the Danger of Death averted: This is, alſo, that Motion under which no ones dies, which rather happens under a ſpaſmodic Motion directly contrary to it. The Phyſician, therefore, who duly knows the Genius, Power, mutual Actions, Effects, and Relations, of theſe two oppoſite Motions, is able to act with Prudence in the Management of Diſeaſes, to foretel their Dangers judiciouſly, and with Reputation to prognoſticate their happy Terminations: Such a Phyſician is, alſo, qualified for underſtanding the ſeemingly uncouth Phraſes of the Antients, when they tell us, that a Fever is the Struggle of Nature with a Diſeaſe; and that the Patient recovers, when Nature gets the better of the Diſorder: For if Spaſms, Inflammations, Congeſtions, and Stagnations of Blood, in themſelves mortal, are not in a certain Period of Time, by the hot, reſolvent, and febrile Motion, digeſted and diſcuſſed, but remain in their full Force and Vigour, then Nature ſinks, and the Patient muſt neceſſarily die. But ſince there are certain Signs, by which the Victory both of Nature over the Diſeaſe, and of the Diſeaſe over Nature, may be eſtimated, it is ſufficiently obvious, that the Prognoſticating Art depends upon certain Principles and Foundations.

We ſhall, therefore, here briefly conſider thoſe Effects and Signs of fatal Spaſms, as rarely prove fallacious in acute Diſorders; and ſuch as, if they appear about the critical Days, after the Patient is weaken'd by the Diſeaſe, and either are not removed, or increaſe, may render the Phyſician pretty certain, with reſpect to the fatal Termination of the Diſorder. Nor are theſe fatal Spaſms obſervable in one, but in many Parts of the Body. If, therefore, a Rigor, accompanied with Coldneſs, is obſerved about the Height of the Diſeaſe, or recurs often; if the Body is not equally ſoft, but hard, dry, and rough; if exanthematous Eruptions are, by the Spaſms of the Skin, repel'd or diminiſhed; if the external Parts are ſeized with an Horror and Coldneſs; if Fontanels, or Ulcers, diſcharge no more Matter; theſe are bad Signs, and prognoſticate the greateſt Danger of Death; becauſe, in conſequence of the Spaſms of the Skin, the Motion of the Blood and Humours to the internal Parts excites dangerous inflammatory Congeſtions, and hinders the peccant Matter from being expelled by Perſpiration. In acute Diſorders theſe Spaſms generally affect the Parts ſubſervient to other Excretions; ſuch as thoſe by Urine and Stool, by conſtricting which, the Urine is render'd thin and aqueous, the Patient coſtive, and afflicted with an Hardneſs and Tenſion of the Abdomen. Some Patients, in conſequence of the Violence of theſe Spaſms, are afflicted with a frequent Deſire of diſcharging their Urine and Excrements.

But the Danger is ſtill greater, when theſe ſpaſmodic Contractions affect the internal and more noble Parts, ſubſervient to the vital Motions; for the ſmall, the contracted, the quick and hard, as, alſo, the unequal and intermittent Pulſe, proceed from no other Cauſe than the ſpaſmodic and convulſive Stricture of the Nerves, which terminate in the Fibres and Coats of the Heart, and always, in the Height of the Diſeaſe, prognoſticate great Danger. Equal Danger is indicated, by a frequent, uneaſy, and difficult Reſpiration, happening about the critical Times; for, as *Hippocrates*, in his Prognoſtics, juſtly obſerves, that as in all Diſeaſes an eaſy Reſpiration is of great Importance to Recovery, ſo in acute Diſorders, a frequent and difficult Reſpiration is always an unlucky and inauſpicious Omen. If the Nerves of the Præcordia are affected with violent Spaſms; inſupportable Uneaſineſs, Inquietude, Toſſing, and Change of Situation in the Bed, happen; if the nerveo-muſcular Membranes of the Oeſophagus and Stomach are ſeized with Spaſms, Efforts to vomit, Regurgitations of the Liquors drank, frequent Diſcharges of a limpid Serum from the Fauces, Difficulty of Deglutition, a Dryneſs of the Tongue and Mouth, afflict the Patient; and if the Duodenum is drawn into Conſent; the whole Body, and eſpecially the Face, is tinged with a yellow Colour: But when more exceſſive and univerſal Spaſms ſhake and rack the whole nervous Syſtem, the certain Death of the Patient may be prognoſticated from the Pinching of his Noſtrils, his collapſed Temples, his cold and flaccid Ears, his hollow Eyes, the Coldneſs and Tenſion of his Skin about the Forehead, and his black or highly pale Colour; all which make up the *Facies Hippocratica*, an infallible Prognoſtic of Death. Convulſions of the Nerves, which, according to *Hippocrates*, in *Sect.* 4. *Aph.* 6. are always bad Signs in acute Diſorders, are indicated by the following Signs: If the Patient lies on his Back, with his Knees contracted; if he falls downward to the Feet of the Bed; if he makes bare his Arms and Legs, and toſſes them irregularly about him; if his Nails and Fingers are pale; if he gathers the Knaps, or Fingers the Edges, of the Bed-cloaths; if he picks off the Eminences from any adjacent Wall, and is afflicted with a Twitching of the Tendons: When all theſe appear, they prognoſticate a ſpeedy Death.

Tho' moſt acute Diſorders have, for their Cauſe, an Inflammation of ſome internal Part, and, for that Reaſon, are not free from Danger; yet, in the Height and Violence of the Diſtemper, freſh Inflammations are frequently formed, eſpecially in the Stomach and Membranes of the Brain, and ſuch Inflammations are always terrible and ſure Prognoſtics of Death: Theſe Inflammations, whether ſeparately or jointly, infallibly deſtroy the Patient, if they appear on the ſeventh, ninth, or eleventh Day, not only of malignant, petechial, contagious, and Camp-fevers, but, alſo, in other acute Fevers, ſuch as the Synochus, Burning Fevers, the Purple Fever, the Small-pox, and Meaſles: An Inflammation of the Stomach is known, if there is a violent Heat, and, as it were, a Senſe of Burning, accompanied with an acute Pain about the Præcordia; if theſe Parts are hard to the Touch; if the Extremities are cold; if the Patient is uneaſy and reſtleſs; and if every thing he takes, whether Medicines or Drink, is immediately either thrown up by Vomit, or, if retained, creates great Uneaſineſs, and increaſes the Anxiety: Sometimes, alſo, the Inflammation is ſo great, as to paſs through the Oeſophagus to the Fauces, which, in this Caſe, are full of burning painful Puſtules, and continually covered with a viſcid and putrid Mucus: All which are Prognoſtics of a quickly approaching Death. Another more dangerous Inflammation, which is generally joined to this, and happens a little before the Death of the Patient, is, that of the Membranes of the Brain, by the *Greeks* called *Phrenitis*, which generally ſucceeds an obſtinate and continual Watching, and an intenſe Pain of the Head: Its Approach may be predicted from a previous Rigor, thin and copious Urine, a Ringing of the Ears, a ſtrong Pulſation in the Head, and a Diſcharge of a few Drops of Blood from the Noſe: Its Preſence is known from the following Signs: The Eyes are red, fiery, and ſtern; there is an Alienation of Mind; the Words are ſenſeleſs and incoherent; the Patient makes improper Anſwers to the Queſtions put to him, often diſcharges Tears involuntarily, gnaſhes his Teeth, and has no longer any Appetite for Drink. If the Phrenitis is ſucceeded by a Convulſion, it is a pretty infallible Sign of a ſoon approaching Death. Theſe are the principal Cauſes which, in acute Diſorders, take off the Patients. Perſons of ſanguine Temperaments, thoſe of choleric or ſanguineo-choleric Habits, young Perſons and Adults, thoſe of delicate Conſtitutions, thoſe prone to Anger, thoſe of lean and conſtricted Habits, or who have indulged themſelves in high, rich, and ſpirituous Living, are principally ſubject to theſe acute Diſorders, which are produced by violent Inflammations and Spaſms.

But, in acute and continual Fevers, there is another Cauſe of Death, in thoſe who are of a plethoric and ſpongious Habit of Body, who are phlegmatic, or whoſe Strength is exhauſted, either by Diſeaſes, Hunger, long Grief, or Hæmorrhages; for

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these are not so much destroy'd by vehement Spasms, and a terrible Train of Symptoms, as by an Imbecillity and Defect of the Motions, a Want of due Tone in the Parts, and a Loss of Strength. In Cases of this Nature, the Stagnations of the Blood and Humours, in the very Beginning of the Disorder, dispose to a putrid Corruption. And as these Disorders are attended with mild Symtoms, they often deceive the Physician, and elude his Prognostics. Hence, because their Nature is not so evident, but occult, their Events are, with Difficulty, prognosticated, and they are generally cla ed among the Fevers of the malignant Kind. Such Fevers are known by the following Signs: They appear with a slight Coldness and Horror; but, in the very Beginning of the Disease, there is an uncommon Loss of Strength, and a languid, frequent, and contracted Pulse. In an erect Posture the Patient easily faints away; the Urine is thin, and without a Sediment; the Patient cannot sleep, though he has a perpetual Propensity to it. This Condition is succeed by a still greater Loss of Strength, and an Alienation of Mind; he complains of no Pain, Thirst, or any great Uneasiness; he is, however, pretty restless, and tosses in Bed; and if his Extremities become cold, and his Pulse begins to be defective, and can no longer be felt in his Wrists, we may justly prognosticate, that the Death of the Patient is not far off. But tho' such Patients are not taken off without an Inflammation of the Stomach, and Membranes of the Brain, yet this Inflammation is not accompanied with violent Spasms, or terrible Symptoms. But a Corruption is easily brought on, which accounts for their Death.

But since all Inflammations generally terminate in a Mortification, or sphacelous Corruption, we shall subjoin some Marks or Signs, by which the Transition from the Inflammation to the Sphacelus may be known. In this Case, therefore, a certain internal Sense of Coldness is perceived; the before-intense and acute Pain about the Head, or inferior Parts, suddenly ceases; the Mind before disorder'd, in some measure, resumes the Exercise of Reason; the Defect of Strength is increased, and the Pulse is either totally deficient, or highly unequal, contracted, and intermittent: The Patient, though before excessively costive, has his Body rendered soluble, or discharges his Excrements involuntarily; his Countenance is unseemly and pale, his Temples, Neck, and Breast, are moist, with chilly Sweat; his Extremities are cold, his Pulse begins to be palpably defective, Rumbling and Noise arise in his Belly; and when the Liquids he drinks descend, they make a Noise, as if they were poured into a deep Vessel: All these are Prognostics of a quickly approaching Death; because, in consequence of the Increase of the Sphacelus, the Tone of the Parts is incredibly destroy'd, and the Strength wonderfully impaired. When plethoric Patients suddenly die of an internal Sphacelus, a few Hours after their Death, their Abdomen becomes surprisingly tumid, large Vesicles arise upon the Surface of the Body, the Face becomes hard and green, the Corps is intolerably fetid, and an ill-smelling Blood is frequently discharged from the Mouth and Nostrils.

There is another Kind of Death incident to those who labour under violent Disorders of the Breast; and that is, Suffocation; which generally takes off those afflicted with a Quinsey, a Peripneumony, a suffocative Catarrh a convulsive Asthma, and a Dropsy of the Thorax; for these Disorders not only totally intercept the free Ingress and Egress of the Air from the Lungs, but, also, destroy the Circulation of the Blood from one Ventricle of the Heart, thro' the Vessels of the Lungs, to the other. Thus an Angina, possessing the internal Muscles of the Larynx, when there is neither any Pain nor Redness in the Neck and Fauces, but, at the same time, an intense Pain, and violent Fever, quickly destroys the Patient by Suffocation. In this Case, as *Lommius*, in *Lib.* 2. *Obs. Medic.* has observed, the Eyes are distorted, red, and prominent, as in those who are strangled; the Voice is inarticulate, small, and resembling the Squeaking of Puppies; the Mouth gasps eagerly for the cold Air, a frothy Saliva is discharged from it, and the Tongue hangs out; Liquors drank regurgitate through the Nostrils; the Patient is totally uneasy, frequently leaps out of Bed, and at last dies of a Suffocation and Syncope. A Peripneumony, also, destroys the Patient by Suffocation; for, if nothing is expectorated, if there is a great Difficulty of Breathing, and Restlessness, if the Matter of the Spit is perceived to make a Noise in the Breast, if the Pulse is unequal and intermittent, if the Strength is impaired, and the Patient seized with a Flux, if what is thrown up on Coughing is frothy, and sometimes bloody, and sometimes yellow, if there is a continual Watching, if a Phrenitis succeeds, if the Desire of drawing in the cold Air is excessively great, if the Patient is fond of lying on his Back, and in an erect Posture; for when he lies reclined upon his Face, he is ready to be suffocated; and in this Case the Patient infallibly dies on the fifth, or, at most, on the seventh Day.

Those who die of a convulsive Asthma, are, also, destroy'd by Suffocation; for this Disorder generally arises from a Dropsy of the Thorax, suddenly produced by a Rupture of the Hydatides: When, for Instance, a large Quantity of Water, by its Weight, hinders the Motion of the Diaphragm, and the free Expansion of the Lungs, so that the Air can neither enter them, nor the Blood pass freely through them. A suffocative Asthma is, also, produced, when the interior glandular Coat of the Bronchia, which is furnished with many large Glands, is so contracted, that the Air contained in the Lungs can neither be expelled, nor fresh Air received. Convulsive Spasms, also, frequently contract the Bronchia so powerfully, that the Patient miserably dies of a Suffocation. In all these Disorders, there is the greatest Anxiety and Restlessness, a tremulous Breathing, an irregular and unequal Pulse, a Rattling and Noise are perceived in the Breast; the Patient cannot rest in one Place; a certain frothy, or bloody Matter is expectorated; and, at last, the Extremities becoming cold, the Patient dies of a Suffocation and Syncope. The like happens in a suffocative Catarrh, which is principally incident to old Persons, those of weak Habits, and Infants; and generally arises from a Palsy of the pneumonic Nerves. In this Disorder, also, the Breath is drawn with the greatest Difficulty and Uneasiness; the Bronchia are filled with an Humour secreted from the Blood; and, because no Spit is expectorated, the received Air makes a great Noise in the Breast, till at last the Patient is suffocated for want of Air. Besides the Signs already mentioned, there are, also, other infallible Marks of Death; such as an intermittent, small, and totally defective Pulse, which frequently happens a few Hours before Death. *It, also, often happens, that a violent Uneasiness, accompanied with a Coldness of the Extremities, comes on.* In Phthisical Patients, when a considerable Cavity, corroded in the Lungs, contains a large Quantity of Pus, and the Pus, in consequence of a Defect of Strength, ceases to be expectorated, Death soon succeeds.

Having considered those Disorders, which destroy by Suffocation, together with their mortal Signs, we shall now treat of some other acute Diseases, which destroy the Patient, both by Inflammation, and violent Spasms; and consider by what Signs Death may be foreseen and prognosticated in them. If, therefore, a white Purple Fever, which arises from an highly vapid and corrupted Lymph, appears in the End of other Fevers, the Measles, or Small-pox, or in Childbed, after the Lochia are suppressed, it is always dangerous, and generally destroys the Patient by an Inflammation of some of the internal Parts, especially of the Stomach and Intestines. It is a mortal Sign, when a violent Heat of the Præcordia, and a great Uneasiness, are succeeded by a Sense of internal Coldness, accompanied with a small, weak, and unequal Pulse; when the Purple Eruptions disappear; when the Patient faints away, has his Mind disturbed, and his Respiration difficult. I have rarely known any young Person to escape in the Small-pox, if the Disorder seizes him with a violent Pain of the Loins, and a Delirium; if, on the second Day, rough Efflorescences and Spots, like the Purple Fever, appear on the Skin; if, on the fifth and sixth Days, after a total Eruption, the Pulse is not more moderate, but continues equally quick; and if the whole Body is covered with Pustules. But, about the ninth Day, a burning intense Pain of the Hands, produced by the Exulceration, frequently changes all the Symptoms which promised the Recovery of the Patient; for this intense Pain, affecting the whole nervous System, produces the greatest Uneasiness, Tossings, and a subsiding of the Pustules; and afterwards a difficult Respiration, a Disturbance of Mind, Convulsions, and a small languid Pulse, coming on, soon put an End to the Patient's Life.

Those who die by any highly emetic, or purgative Poison, are destroy'd by a sphacelous Inflammation, as is obvious from dissecting their Bodies. The Signs of an approaching Death, in this Case, are, when internal Heats, and violent Uneasiness, are succeeded by a small, unequal, or totally defective Pulse, accompanied with a cold Sweat, a Delirium, and Convulsions; which, when brought on by a purgative Medicine, are by *Hippocrates*, in *Aph.* 25. of *Sect.* 7. and, in several other Parts, pronounced mortal. Those who die of the Stone, are generally taken off by an Inflammation of the Stomach and Meninges; for, if a Vomiting, and acute Pain, are succeeded by a Fever, accompanied with great Uneasiness, and an insatiable Thirst, and if afterwards an Hiccup, a Delirium, and a Coldness of the Extremities, come on, the Patient will not live long. In a Cholera, if acute Pains and Gripes happen, if Humours, especially of a green Colour, are impetuously discharged by Vomit and Stool, if there is an insatiable Thirst, if the Countenance is yellow or pale, and the Pulse small or contracted, the Disorder is not without Danger. But if the Pulse is totally defective, if the Legs are contracted, the Body covered with a cold Sweat, and the Patient seized with Deliquiums, these are pretty sure Signs, that the Inflammation is degenerated into a Sphacelus. Now the most certain Signs of a Sphacelus are, when the acute Gripes suddenly cease, when the Extremities become cold, and the Strength is greatly impaired. An Hiccup, a Cardialgia, Heat, and Uneasiness about the Præcordia, generally precede this Condition, and indicate a fatal Inflammation of the Stomach. In the Iliac Passion, where the Pains are intense, and accompanied with Costiveness, and a continual Vomiting of fetid Matter, if an Hiccup, a Delirium, cold Sweats, Refrigeration of the Extremities, and Convulsions of the Nerves, come on, these are certain Signs of an approaching Death, as *Hippocrates*, in *Sect.* 7. *Aph.* 10 has justly observed. Violent convulsive Colics take the Patient off in the same manner; for, in this Disorder, there is often such an intense Pain in the Intestinum Rectum,

produced by the ſtagnant hæmorrhoidal Blood, that this Inteſtine is not only ſeized with an Inflammation, but, alſo, a mortal Sphacelus; under which, in conſequence of the putrid State of the Inteſtine, highly fetid Excrements are diſcharged; a frequent and weak Pulſe, accompanied with a great Loſs of Strength, ſucceeds; and the Sphacelus often ſpreads to the external Parts, and the Scrotum; after which, the Patient is ſeized with Deliquiums, and ſoon dies.

'Tis certain, that many Women die either during, or after Labour; for which Reaſon we ſhall conſider ſome of the moſt fatal Preſages and Prognoſtics, in Caſes of this Nature. If, therefore, a Woman, in conſequence of an unnatural Situation of the Fœtus, eſpecially when too large, is, for ſome Days, ſucceſſively racked and fatigued with violent Pains, accompanied with internal Heat, which may be known by the Celerity of the Pulſe, it frequently happens, that in Labour, or after it, the Strength being ſuddenly loſt, ſhe falls into a kind of Deliquium, or Diſorder reſembling an Apoplexy, and can by no means have Strength and Life reſtored to her: In ſuch a Situation, it is a Sign of Death, when the Diſorder laſts for ſome Hours, and the Patient cannot be rouſed by the moſt *penetrating Medicines, ſuch as Spirit of Sal Ammoniac*, prepared with Quick-lime, and mixed with Oil of Rue, put into the Noſtrils. If the Face, during the Paroxyſm, remains red, it is a Sign, that the Blood, too impetuouſly convey'd to the Brain by the Spaſms, has produced this Diſorder, in every reſpect ſo like an Apoplexy; and, after the Death of the Patient, a bloody fetid Serum is generally diſcharged from the Mouth and Noſtrils. If, after the Fœtus is dead in the Uterus, the Mother dies in Labour, the Child is frequently expelled, in conſequence of the Relaxation of the Paſſages, and the internal fermentative Motion. Thoſe Women who die in Childbed, for the moſt part, ſuffer great Pains from a Retention of the Lochia; but if theſe Pains are not ſucceeded by the Lochia, but rather accompanied with a Flux, a fatal Inflammation of the Uterus, and a Fever, generally ſucceed. Such an Inflammation is known from a burning Heat, reaching from the inferior Parts to the Region of the Heart; and, if it is accompanied with great Uneaſineſs, Loſs of Strength, Reſtleſſneſs, and a total Loſs of Appetite; if afterwards there is an internal Senſe of Cold, with an Horror, a frequent, ſmall, and weak Pulſe, and if the Sight begins to grow dim, theſe are Signs, that Death, proceeding from a Sphacelus, is not far off. Many Women in Childbed die with the full Uſe of their Reaſon, which frequently returns to them a few Hours before their Death; ſo that unskilful Perſons conclude them to be in a fair way of Recovery, whilſt the more Skilful and Judicious know, from the State of the Pulſe, that Death is approaching. If, in conſequence of a large Effuſion of Blood, after Labour, and in Childbed, a ſlow Heat, accompanied with a frequent and weak Pulſe, and which is not allay'd in the Morning after Sleep, is brought on, and attended with a total Loſs of Appetite and Strength, the Patient generally dies of a Syncope, about the End of Childbed, that is, in the ſixth Week.

In an exulcerated Cancer, ſcarcely any Patient is preſerved, on account of the violent Corruption, which is indicated by the black, thin, and highly fetid Sanies. In this Caſe, the Patient is afflicted with a ſlow Fever, and the Strength daily decreaſes; the Sleep, alſo, is uneaſy, reſtleſs, or none at all, till, at laſt, a Deliquium and Death enſue. Perſons are ſometimes ſuddenly taken off by the Retroceſſion of Inflammations of the external Parts; ſuch as Eryſipelas, and the Gout, either in the Feet or Hands. Nor does this happen in any other manner, than by an Inflammation of the Stomach and Inteſtines. But 'tis ſtill more dangerous, if, in the Plague, Carbuncles and Buboes recede, or are not ſufficiently expelled; for, in this Caſe, the Death of the Patient is certain, ſince he is ſeized with an Horror, becomes reſtleſs and uneaſy; an Heat ſeizes the Region of his Stomach, whilſt his Extremities are cold; he has a Deſire to vomit, or is ſeized with an Hiccup; after which, the Patient is afflicted with a Perturbation of Mind, and dies of a Syncope. If any one dies of an exceſſive Loſs of Blood, which may happen in Miſcarriages, a Spitting of Blood, a Vomiting of Blood, the Morbus Niger of *Hippocrates*, or violent Hæmorrhages in Fevers, ſuch a Patient is taken off by a Deliquium and Syncope. But 'tis to be obſerved, that, for the moſt part, Death is preceded by an inſatiable Thirſt, an Inclination to vomit, a weak and frequent Pulſe, and Convulſions of the Extremities, which are Signs, that the Blood, ſtagnating in the internal Parts, ſuch as the Head and Stomach, ſtill excites ſome Spaſms; for Thirſt generally ariſes from a ſpaſmodic Stricture of the glandulous Coat of the Oeſophagus. The Diſorders of which Children die, are generally of the ſpaſmodic and convulſive Kind, and bring on an Inflammation and Sphacelus, eſpecially of the Stomach, Inteſtines, or Head; for, in conſequence of the acute Pains, they eaſily fall into Epilepſies and Convulſions, Fevers and Aſthmas. If one epileptic Fit ſucceeds another, and if the Patient was before very coſtive, he ſpontaneouſly diſcharges highly fetid and black Excrements: If the Voice becomes ſhrill and interrupted, and the whole Body is intenſely hot, we may prognoſticate, that Death is not far off.

We now come to conſider the Preſages of Death in ſome chronical Diſorders, the moſt conſiderable of which are the Dropſy, a Cachexy, the Scurvy, a Conſumption, an Hectic, a Phthiſis, and a Tabes. Thoſe who are deſtroyed by theſe Diſtempers, die ſlowly, but certainly; becauſe, though the Corruption of the Viſcera, from a Stagnation or Extravaſation of the Humours, proceeds ſlowly, yet it cannot be removed by any means. The Signs of a Corruption of the Abdominal Viſcera, and, conſequently, of approaching Death, are, a Loſs of Appetite, and a Loathing of ſuch Aliments, as the Patient was fond of, when in Health. If the ſlow Fever increaſes, and the Pulſe becomes quicker, theſe Signs always denote an internal Corruption; which is, alſo, indicated by a Loſs of Strength, a great Difficulty of breathing, and reſtleſs Sleep, which rather weakens, than refreſhes. If theſe Symptoms afflict the Patient long, and yield to no Medicine, they are certain Prognoſtics of Death, eſpecially in old Perſons, or thoſe, who, in conſequence of a previous Diſorder, have fallen into ſuch a chronical Diſeaſe. Theſe are ſome of the moſt common Signs of Death in chronical Diſorders. But we ſhall add ſome, peculiar to certain Diſeaſes of the chronical kind. As for a Phthiſis, then, the Signs of Death in this Diſtemper are; if the whole Body is conſumed; if a continual Hectic Fever afflicts the Patient; if the Face is red, and the Body preternaturally ſoluble; if there are colliquative Sweats, and œdematous Swellings of the Feet; if the Spit is ſuppreſſed, the Nails pale, the Eyes ſunk, and the Noſtrils ſharp and pinched. In caſe a Dropſy ſucceeds a long-continued Aſthma, and Palpitation of the Heart, or an Induration of the Liver, a Quartan, we may pretty certainly prognoſticate, that the Patient cannot be preſerved; and if the Urine is ſmall in Quantity, turbid, and red, it is a very bad Sign. If the ſuperior Parts become ſlender, and the Face aſſumes a yellowiſh Colour, we may pretty infallibly prognoſticate Death ſome Months before it happens; but the Patient is infallibly deſtroyed, if the Fever is increaſed, and the Reſpiration rendered more difficult. Thoſe who frequently, and eſpecially after violent Exerciſe of the Body, or Commotions of Mind, perceive an obſtinate Palpitation of the Heart, and afterwards fall into a convulſive Aſthma, a Spitting of Blood, or a Dropſy, may have their Death prognoſticated a long time before it happens, eſpecially if they are afflicted with Deliquiums; for the Cauſe of all theſe Diſorders is a polypoſe Concretion in the Veſſels of the Heart, which cannot be removed by any Medicine; and which, with the Concurrence of other Cauſes, generates theſe terrible Diſorders; and if Deliquiums, alſo, produced by the Polypus, happen frequently, and without any manifeſt Cauſe, the Patient generally dies ſuddenly This Doctrine is, alſo, confirmed by the Authority of *Hippocrates*.

When a ſphacelous and mortal Corruption affects the Liver, there is a great Loathing of Food, eſpecially of Fleſh; there is a frequent and inſatiable Thirſt, a Fever, a Loſs of Strength, an Hiccup; now-and-then Serum, or yellow Bile, is diſcharged by Vomit, and the Body is gradually conſumed. In ſuch Caſes, after Death, I have obſerved the Liver evidently ſphacelous and black. An Exulceration of the Stomach, alſo, produces a long and mortal Diſorder, and is known, if a great Uneaſineſs and Vomiting ſucceed Eating: And theſe Misfortunes are increaſed by any acrid and ſaline or ſpirituous Medicines; the Body is waſted, the Pulſe is always quick, the Extremities ſeized with a Rigor, and ſometimes with an Horror; Fontanels are dried up, and the Sleep is little and reſtleſs; ſuch Patients die in the third or fourth Month, and their Death may be prognoſticated a long time before it happens. In a Cachexy, if the whole Body becomes tumid, inflated, and pale; if there is a Loathing of Food; if the Patient frequently vomits a fetid Matter, and diſcharges little by Stool; if the Urine is crude, and in ſmall Quantity; if the Reſpiration is difficult, and the whole Body fetid; if afterwards a frequent Pulſe, and a more difficult Reſpiration, happen, the Patient's Death, in ſome Months, may be prognoſticated; and it happens the more infallibly, the more Errors in Diet, or exceſſive Drinking, the Patient commits; or the more he is afflicted with long Grief.

We ſhall, farther, ſubjoin ſome uſeful Cautions with reſpect to forming Prognoſtics. Spaſmodic chronical Diſorders are, therefore, to be carefully diſtinguiſhed from thoſe of the acute Kind; for, in hypochondriac and hyſteric Diſorders, ſuch Symptoms occur, as in acute Diſorders prove mortal, but are leſs dangerous in the former; for nothing is more frequent in hypochondriac and hyſteric Affections, than for the Patient to be afflicted with violent Uneaſineſs, a Difficulty of Breathing, a Coldneſs of the Extremities, a thin and watry Urine, a ſmall and weak Pulſe, and frequently violent Deliquiums; which Symptoms are, however, ſoon carried off, without any Danger. The Stages of Diſtempers are, alſo, to be carefully diſtinguiſhed; for, of all the mortal Signs already enumerated, if ſome, or even a conſiderable Number, ſhould appear in the firſt Days of a Diſorder, thoſe would act inconſiderately, who ſhould

ſhould thence conclude, that Death was at hand. But it is otherwiſe, if, after the Strength is, for ſeveral Days, exhauſted by exceſſive Heat, Want of Appetite, Anxiety and Pain, thoſe fatal Spaſms, and the Symptoms produced by them, appear; eſpecially at thoſe times, on which the Diſorder is generally terminated in a ſalutary manner; which is, for the moſt part, on the odd Days, that is, the ſeventh, ninth, and eleventh Day. Great Regard is, alſo, to be had to the Habits of Patients, whether they are of weak and languid, or of vigorous and robuſt Conſtitutions, ſince the former are always in greater Danger, than the latter. Among the Weak, we reckon old Perſons and Infants, thoſe of ſpongious full Habits, thoſe who have ſmall Veſſels, thoſe ſprung from weak and infirm Parents, and thoſe weakened by previous Diſorders, immoderate Hæmorrhages, long Hunger, the Affections of the Mind, Grief, Care, and Thoughtfulneſs. Among this Claſs we, alſo, reckon Childbed Women, and thoſe, who, in conſequence of a bad Regimen, and a Suppreſſion of the Excretions, have contracted a Redundance of impure Juices in their Veſſels; for, in all theſe tender Habits, the Pains and Inflammations eaſily degenerate into a mortal Sphacelus. We ought, alſo, carefully to obſerve, whether the Symptoms, which appear, are excited by external Cauſes, ſuch as Anger, a Fright, Refrigeration of the Body, improper Aliment, or Medicines of a draſtic or virulent Quality; all which, in dangerous Diſeaſes, and in Perſons of weak Habits, are of ſuch a Nature, as to prove mortal, and accelerate the Death of the Patient. But if, in leſs dangerous Diſeaſes, and in robuſt Habits, theſe terrible Symptoms appear, they are not forthwith to be pronounced abſolutely mortal. And, laſtly, in order to form a right Prognoſtic, it is of great Importance, duly to conſider the Beginning of the Diſorder; for every Diſeaſe, which, in the Beginning, deſtroys the Strength, and is accompanied with a frequent Pulſe, portends no Good, becauſe it clearly diſcovers a Loſs of Strength, an Impurity of the Juices, and a fatal Dyſcraſy of the Blood. *Frederic Hoffman.*

PRÆSCRIPTIO. A Preſcripion.

PRÆSEPIA, or PRESEPIOLA. The Sockets in the Jawbones, in which the Teeth are contained.

PRÆSERVATIVA REMEDIA. Remedies, which preſerve Health, and prevent Diſeaſes.

PRÆSERVATORIA INDICATIO. The Preſervatory, or Prophylactic Indication. See INDICATIO, and FIBRA.

PRAMNIOS, *πράμνιος*. A Sort of black and auſtere Wine, mentioned by *Hippocrates*, in his Treatiſe of the Diſorders of Women.

PRASINUM VIRIDE, is the ſame as *Flos Æris*. See Æs.

PRASINUS, or PRASOIDES; the ſame as PORRACEUS.

PRASIS is explained by *Rulandus*, *Creta viridis*.

PRASITES. An Epithet for a ſort of Wine deſcribed by *Dioſcorides*, *L.* 5. *C.* 58. It is made by infuſing the Leaves of Horehound in fermenting Muſt.

PRASIUS. Offic. Charlt. Foſſ. 33. Calc. Muſ. 217. Kentm. 47. Boet. 203. Worm. 95. Aldrov. Muſ. Metall. 897. *Praſus ſive Praſius.* De Lact. 42. *Lapis, Praſius dictus, aliis, Plaſma, aut Nilium, aut Leda. Lapis Nephriticus viridis Mali Aurantii foliorum virore.* Cup. Hort. Cath. Supp. 2. 51. THE GREEN STONE.

It is green for the greateſt Part of it, but is ſeldom without black, and ſometimes white Spots. Many take it for the Mother of the Emerald, becauſe this Gem is ſometimes found in it. The *Praſius* has the Virtues of the Emerald, but in a lower Degree.

PRASION, *πράσιον*. White Horehound.

PRASUM, *πράσον*. A Leek.

PREHENSIO. A Name for the CATALEPSIS.

PREMNON, *πρέμνον*. The Extremity of the White of the Eye.

PRESBYTÆ. Viſion is commonly divided into three Sorts; the good Sort, that of the Myopes, and that of the Presbytæ.

A Perſon is ſaid to enjoy a good Sight, when he can ſee to read at a Foot Diſtance: In this Caſe the Cryſtalline Humour is in its moſt perfect State, and ſuch People can diſtinguiſh diſtant Objects, like the Presbytæ, but more accurately. This Species of Viſion has three Degrees, or Focuſes; one at the Diſtance of half a Foot, another at a Foot Diſtance, and a third a little farther.

The Sight of the Myopes has a very ſhort Focus; they can ſee diſtinctly, when the Object is near, and require little Light to read. At a Diſtance they ſee confuſedly, and Objects conſiderably remote they cannot perceive at all. This Defect of the Sight is attributed to the too great Convexity of the Cryſtalline.

The Myopes have, alſo, three Degrees or Focuſes. The firſt is, when they cannot read, without bringing the Book cloſe to the Noſe; the ſecond hold it two or three Fingers-Breadth farther; and the third hold it at half a Foot Diſtance, or more. In order to diſtinguiſh diſtant Objects, the Myopes ſhould uſe concave Glaſſes.

The Presbytæ have their Focus very long; they obſerve remote Objects diſtinctly, but thoſe which are near, confuſedly: This Defect of the Sight is imputed to the too great Flatneſs of the Cryſtalline. The Presbytæ have, alſo, three Degrees or Focuſes; one at the Diſtance of a Foot and an half; another at two Feet and an half; and the third at a greater Diſtance: Upon this account they cannot read without Spectacles. This Species of Viſion is common among the Aged, and is directly contrary to that of the Myopes.

Of theſe three Species of Sight, two of them are ſubject to Alteration. The good Sort may ſometimes be changed into that of the Myopes, eſpecially in thoſe who read much, or apply themſelves to fine Work; and in Old-age it is liable to change to that of the *Preſbytæ*. The Sight of the Myopes admits of no Variation; and that of the Presbytæ ſometimes becomes good. Theſe different Changes of Viſion proceed from the different Degrees of Convexity, of which the Cryſtalline Humour is capable. When the nutritious Juice, neceſſary to maintain the Convexity of the Cryſtalline, is ſufficiently fluid to paſs through the Extremities of the fineſt Veſſels belonging to it, then the Sight is perfect. But, if the Juice is too thick, it cannot enter theſe Veſſels in a ſufficient Quantity; for which Reaſon the Convexity will be diminiſhed, in proportion to the Tenacity of the Juice. *St. Yves.*

PRESIS, or PRESMA, *πρῆσις*, or *πρῆσμα*. *Galen* explains this Word, Inflation.

PRESMUCHUM, or PRESMUKIS. Ceruſs. *Rulandus.*

PRESSORIUM. A Preſs. *Rulandus.*

PRESSURA. Preſſure, or Compreſſion. *Preſſura Gentium*, in *Paracelſus*, is the Venereal Diſeaſe.

PRESTER, *πρηστής*. The external Part of the Neck, which is inflated by Anger. *Gorræus.* But *Preſter* is, alſo, the Name of a Serpent, the ſame as *Dipſas*.

PRIAPEIA. A Name for the NICOTIANA MINOR.

PRIAPISCOS, *πριαπίσκος*. The Name of a ſmall Piece of Wood, which conſtitutes a Part of the *Scamnum Hippocraticum. Priapiſcos*, alſo, imports a Tent made of Linen, rolled up in the Form of a PENIS. *Paul. Ægineta, Lib.* 3. *Cap.* 24.

PRIAPISMUS, *πριαπισμός*. A Priapiſm. See SATYRIASIS.

PRIAPOLITHUS. The Name of a Stone mentioned by *Borelli*, found about *Caſtro* in *Italy*, reſembling in Shape the Penis.

PRIAPUS, *πριάπος*. A Penis.

PRIMÆ VIÆ, The firſt Paſſages; that is, the Stomach, and Inteſtinal Tube.

PRIMITIÆ. The Waters which precede the Fœtus at the Birth.

PRIMORES. A Name for the *Dentes Inciſores*, or Foreteeth.

PRIMULA VERIS.

The Characters are;

The Root is perennial; the Leaves are oblong, and wrinkled; the Calyx is quinqueſid, pentagonal, and ſoft: In this Calyx is ſeated a monopetalous Flower, ſhaped ſomewhat like a Salver, with its Margin divided into five Heart-ſhaped, biſid, Segments; this Flower is furniſhed with five Stamina, which ariſe from the Inſide of its tubulous Part. The ſeminal Veſſel is an oblong Shell, concealed in a Calyx, furniſhed with a long Tube, and gaping at its Apex; the Seeds are roundiſh.

Boerhaave mentions twenty Species of *Primula Veris*; the firſt twelve of which are of the Claſs of thoſe which bear a ſingle Flower on every Stalk, and are enumerated as follows;

1. Primula Veris; pallido flore; humilis. *Boerh. Ind. A.* 198. *Primula Veris.* Offic. *Primula Veris minor.* Ger. 636. Emac. 781. *Primula Veris vulgaris.* Park. Theat. 535. Raii Hiſt. 2. 1080. Synop. 3. 284. *Primula Veris, floribus ex ſingularibus, majoribus, ſimplicibus.* J. B. 3. 497. Tourn. Inſt. 125. *Verbaſculum ſylvarum majus, ſingulari flore.* C. B. P. 241. THE PRIMROSE.

The common Primroſe has large wrinkled Leaves, of a dark Green above, and whiter underneath, broad and round at the End, and growing narrower towards the Roots; the Flowers ariſe directly from the Root on long ſlender Foot-ſtalks, conſiſting of ſingle Tubes ſpread out at Top, and cut into five large, round Segments, of a pale-yellow white Colour, ſet in looſe Calyces. The Root is ſmall and fibrous. It grows in Thickets, and under Hedges, and flowers in *March* and *April*. The Flowers and Roots are uſed, though but ſeldom.

The Flowers are commended by ſome, as good againſt Diſorders ariſing from Melancholy, and phlegmatic Humours; the

Juice

Juice of the Root is ſometimes uſed as an Errhine to purge the Head of tough ſlimy Phlegm. *Miller's Bott. Off.*

2. Primula Veris; Conſtantinopolitana; flore albo. *T.* 125. *Verbaſcum Turcicum ſive Carchicec Turcarum.* M. H. 2. 555.

3. Primula Veris; Conſtantinopolitana; flore dilute carneo. *T.* 125.

4. Primula Veris; Conſtantinopolitana; flore dilute purpureo. *T.* 125.

5. Primula Veris; Conſtantinopolitana; flore majore purpureo. *T.* 125.

6. Primula Veris; Conſtantinopolitana; flore minore purpureo. *T.* 125.

7. Primula Veris; Conſtantinopolitana; flore miniato. *T.* 125.

8. Primula Veris; Conſtantinopolitana; flore luteo. *T.* 125.

9. Primula Veris; Conſtantinopolitana; flore flaveſcente. *T.* 126.

10. Primula Veris; Conſtantinopolitana; flore obſolete pallido. *T.* 126.

11 Primula Veris; Conſtantinopolitana; flore obſoleto. *T.* 126.

12. Primula Veris; flore pleno. *H. Eyſt. Vern.* o. 1. *F.* 5. *Fig.* 3. *Verbaſculum, ſylveſtre, magno, plenoque flore.* C. B. P. 242.

The ſecond Claſs contains thoſe Species, which, on one Stalk, bear a Multitude of Flowers, diſpoſed ſomewhat in the Form of an Umbella; they are as follows:

1. Primula Veris; umbellata; odorata; pratenſis. *Boerh. Ind. A.* 199. *Paralyſis.* Offic. *Paralyſis vulgaris pratenſis, flore flavo, ſimplici odorato.* Park. Parad. 244. *Primula Veris major.* Ger. 635. Emac. 780. Raii Hiſt. 2. 1081. Synop. 3. 284. *Primula Veris odorata, flore luteo ſimplici.* J. B. 3. 495. Tourn. Inſt. 124. *Verbaſculum pratenſe odoratum.* C. B. P. 241. COWSLIPS, or PAIGLES.

The Cowſlip is well known to have ſomewhat ſoft, large, wrinkled Leaves, green above, and whitiſh and hairy underneath, and full of Veins, broadeſt at the End, and growing narrower towards the Stalk; among theſe ariſe one or two round ſmooth Stalks, five or ſix Inches high, bearing on the Top ſeveral yellow Flowers, in a kind of Umbel, each on a long Foot-ſtalk, and ſet in a looſe whitiſh pentangular Calyx; the Top being round, and cut into five Segments, with Saffron-coloured Spots in the Middle of each; the Part incloſed in the Calyx being hollow, and Pipe-faſhioned; they are of a pleaſant ſweet Scent. The Root is compoſed of ſeveral Strings or Fibres, ariſing from a ſmall Head; it grows in moiſt Meadows and Marſhes, and flowers in *April*. The Leaves ſometimes, but the Flowers are moſtly uſed.

They are accounted cordial and cephalic, and beneficial to the nervous Syſtem, and ſerviceable againſt the Epilepſy, Palſy, Apoplexy, and Pains in the Head; they are anodyne, and ſuppoſed to have a Tendency to procure Sleep, for which Purpoſe a Tea is ſometimes made of the Flowers. The Leaves are uſed in warming, ſtrengthening Ointments, particularly the *Unguentum Nervinum.*

Officinal Preparations from Cowſlips are, the ſimple Water, the Syrup, and the Conſerve. *Miller's Bot. Off.*

The Flowers of this Plant, being analyſed, yield a good deal of Acid, a little urinous Spirit, no concreted volatile Salt, and a pretty deal of Oil and Earth; theſe Flowers have a volatile, aromatic, oily Salt, pretty much tempered. They are very aperitive, and good to reſtore the Courſe of the Spirits. In the Apoplexy and Palſy, *Tragus* preſcribed the Conſerve, or diſtilled Water, of theſe Flowers. To draw the Spirit from them, they muſt be ſprinkled with common Salt, left to ferment ſome Days, and then diſtilled; this Spirit has the ſame Virtues. The Leaves and Roots are very aperitive. *Martyn's Tournefort.*

The Plant is heating and drying, and has ſomething of an acrimonious and bitteriſh Taſte; it is, alſo, ſomewhat aſtringent, and has an anodyne Virtue. The principal Uſes, to which it is applied, are in cephalic Diſorders, and the Arthritis, and other Pains and Affections of the Joints.

2. Primula Veris; pallido flore; elatior. *Boerh. Ind. A.* 199. *Tourn. Inſt.* 124. *Herba Petri.* Offic. *Primula pratenſis inodora lutea.* Ger. 635. Emac. 780. Raii Hiſt. 2. 1081. Synop. 3. 284. *Primula Veris cauliſera, pallido flore inodoro aut vix odoro.* J. B. 3. 496. *Paralyſis altera odorata, flore pallido polyanthos.* Park. Parad. 244. *Verbaſculum pratenſe aut ſylvaticum inodorum.* C. B. B. 241. GREAT COWSLIPS, or ORSLIPS.

They grow in Woods and Thickets, and flower in *April*. The Leaves, infuſed a Night in White-wine, are recommended againſt the Anaſarca. *Dale.*

3. Primula Veris; geminato flore. *H. Eyſt. Vern.* o. 1. *F.* 5. *Fig.* 4. *Verbaſculum proliferum.* C. B. P. 242. M. H. 2. 554.

4. Primula Veris; Anglicana; flore pleno. *H. Eyſt. Vern.* o. 9. *F.* 3. *Fig.* 2. *Verbaſculum, hortenſe, multiplex.* C. B. P. 242.

5. Primula Veris; hortenſis; umbellata; caule & flore folioſo, coccineo, majore.

6. Primula Veris; hortenſis; umbellata; flore folioſo; luteo, minore.

7. Primulæ Veris; umbellatæ; odoratæ; hortenſis; ſimplicis varietas uberrima pro varietate jucundiſſima coloris multiplicis.

8. Primulæ Veris; umbellatæ; geminato flore abundans & grata ratione pigmenti diſcrepantis copia. *Boerh. Ind. alt. Plant.*

It is called *Primula Veris*, becauſe it flowers in the Spring before all other Plants. It is recommended in a Palſy proceeding from Want of Spirits. The Leaves are eatable in Salads, or boiled with other Greens; and their expreſſed Juice is good againſt the Palſy, for it is reſtorative; the Flowers have a very ſweet and innocent Smell, and are diſſolvent, without Danger of an Inflammation. The Leaves and Roots are aperitive, and effectual in Apoplexies and Rheumatiſms, being comfortable and ſtrengthening to the Nerves and Joints; externally uſed, they are of Service in Tumors ariſing from the Bites or Stings of venomous Animals, and in the Gout. Vinegar impregnated with the Roots, and attracted into the Noſtrils inſtead of an Errhine, is an admirable Remedy for the Tooth-ach. A Conſerve of the Flowers is very good for the Palſy; *Willis* and *Sydenham* preſcribe it in acute Diſeaſes. The Flowers, when young and tender, are uſed inſtead of the Flowers of the Tilia; for they procure Sleep, and are of an anodyne Quality. *Hiſt. Plant. adſcript. Boerhaav.*

PRINCEPS. A Name for the *Inteſtinum Rectum.* *Principes Dies* are Critical Days.

PRINCIPIA. The Principles, or Elements, of Bodies.

It is impoſſible to diſcover the Virtues of any Body, or how mixed Bodies of different Kinds ſtand related to the human Body, either for the Preſervation of its Functions entire, the reſtoring them when loſt or impaired, or for the total Deſtruction thereof, till we know the Principles of which they conſiſt, and, likewiſe, the Mixture and Proportion of ſuch Principles in Bodies, to which their Effects are principally owing. Wherefore, having diſcovered, by various Ways, the Parts into which a true chymical Analyſis reſolves Bodies, we muſt look upon ſuch ſimple Parts, into which all mixed Bodies are capable of being reſolved, and of which they ſeem to be compounded, as their true and genuine Principles. The Antients, having obſerved, that, in analyſing all Bodies whatever, they obtained a Spirit, or Mercury, Sulphur, Salt, Water, and Earth, concluded the Number of Principles to be five.

If Wine, for Inſtance, be diſtilled in a proper Alembic, a burning Water, or Spirit, will firſt ariſe, next an inſipid Water, which they call *Phlegm*, a thick, viſcid Maſs alone remaining in the Still. This they put into another Veſſel, or Retort, which being expoſed to a more intenſe Heat, a ſmall Portion of Phlegm comes over firſt; then an acid Water, which, according to them, is ſtill Spirit, or Mercury; next, a fat, oily Subſtance, called *Sulphur*. What remains ſtill in the Retort, is burnt to Aſhes in an open Fire. Theſe Aſhes are thrown into an earthen Veſſel, with a proper Quantity of boiling Water, which they impregnate with Salt. This Water, being tred through Cap-paper, and afterwards evaporated, leaves the Salt at the Bottom. The other Part of the Aſhes, which the Water does not take up, is termed *Earth*, or *Caput Mortuum.*

Of theſe five Subſtances the Chymiſts have reckoned two to be paſſive, Water, and Earth; and three active, Spirit, Sulphur, and Salt; and on theſe laſt they thought the whole Virtue and Efficacy of the mixed Body depended. In this Analyſis we may obſerve, that there is a twofold Spirit; one oily and inflammable, which riſes firſt by a gentle Heat, and is termed *Spirit of Wine*; another acid and penetrating, like that of Vinegar. Beſides, theſe Chymiſts give the Name of *Spirit* to other penetrating, volatile, or urinous Liquors, obtained from the Parts of Animals, ſuch as the *Spirit of Urine*, *Hartſhorn*, *Blood*, and ſuch-like Subſtances: But the later Chymiſts have baniſhed theſe Spirits from the Number of their Principles, as being nothing elſe than Sulphur, or Salt, diſſolved in Water. Thus Spirit of Nitre, and others of that Kind, are only acid Salts in Water; Spirit of Hartſhorn, or Urine, alcaline Salts; and Spirit of Wine, or of Turpentine, an ethereal, attenuated Oil.

Some of the Moderns deny, likewiſe, that either Sulphur or Salt deſerve the Name of Principles, or Elements; as not being the moſt ſimple Subſtances producible by Chymiſtry. For Sulphur, when treated with due Care, may be reſolved into Salt, Water, and Earth; as is evident by diſtilling fetid diſtilled Oils ſeveral times with Quick-lime; which, by this Treatment, yield,

yield, in large Quantities, a volatile Salt diſſolved in Phlegm, together with a Caput Mortuum, or Earth. Likewiſe ethereal Oils are only fat, thick Oils like that of Olives, attenuated by Salts, and diſſolved in Water, as may be proved by the two following Experiments: If Oil of Olives, or any other of that kind, be mixed with a fermenting Liquor, ſuch as a Solution of Honey in Water, the Whole will be converted into an inflammable Spirit. And if a Quart of Spirit of Wine, diluted with ſix Quarts of common Water, be expoſed in a cold Place to the open Air, the volatile Salts will fly off, and leave Drops of Oil ſwimming at the Top, which are, in every reſpect, the ſame as Oil of Olives, or Almonds.

Salt has no better Title to a Principle, than Sulphur, becauſe it may, by proper Management, be at length reduced to Earth and Water. Thus Nitre, by Diſtillation, may be almoſt wholly reduced to an acid Spirit; but, if it be burnt with Tartar, or Charcoal-duſt, it becomes an alcaline Salt, called *fixed Nitre*.

This, if ſuffered to run per Deliquium, and afterwards filtred through Cap-paper, will leave a large Quantity of Earth behind; and, if the ſame Liquor be diſtilled to Drineſs, a large Quantity of inſipid Water will come over, and the Salt remaining at the Bottom of the Retort will have loſt a great Part of its firſt Quantity. If this Operation be repeated, nothing will at length remain, but Earth. Again, the Vitrification of alcaline Salts ſeems to be nothing, but the Converſion of them into Earth; for Glaſs has no Qualities different from thoſe of Earth.

What we have proved by Experiments made by reſolving Bodies, may be further confirmed by others relating to the Formation and Compoſition of them, and particularly by *van Helmont*'s famous Experiment on the Willow, which has been often quoted by ſucceeding Authors. He took about two hundred Pounds of Earth dried in an Oven, and put it into a Veſſel covered with an iron Lid full of Holes. In this Earth he ſet a Branch of Willow, weighing about five Pounds, which ſoon took Root, and grew ſo much, that in eight Years time it weighed an hundred and ſixty Pounds, the Earth it ſtood in, having, during all this Time, loſt only a few Ounces; ſo that the whole Increaſe of the Tree muſt have been owing to Rain-water, and a very ſmall Proportion of Earth, and the Salts and Sulphur therein muſt have been compoſed of theſe two Elements alone. The Experiments of this kind, made by the illuſtrious Mr. *Boyle* on ſmall Sprigs of Mint, Marjoram, Penyroyal, Baum, and the like, ſet in Phials filled with clear Water, are more to be depended on. They increaſed in a ſhort time to double their firſt Weight, and, being afterwards diſtilled, they yielded the very ſame Principles, as they would have done, had they grown in the moſt proper Soil; from whence it is plain, that Salt and Oil owe their Original to Water and Earth.

Water and Earth, in the ſtricteſt Senſe, deſerve the Name of *Principles*; but, in the Formation of mixed Bodies, a third Principle muſt neceſſarily concur with them; for as they are of themſelves wholly inactive, ſomething muſt be ſuppoſed to give them their Motion and Activity. Without this, Water would immediately turn to Ice; and as there are few Bodies, out of which Fire may not be drawn, it is evident, that there muſt be ſome active, moveable Principle in them all, to which the Motion of the other Parts is to be aſcribed. Therefore, though this Principle ſhould not fall under our Senſes in the ſame manner as the others, that can be no Reaſon for doubting of its Exiſtence, ſince it muſt concur in the Compoſition of all Bodies, which, if they were made of Water and Earth alone, would remain for ever without any Virtue or Energy. This they muſt receive from another Principle, and, according to the different Combinations of all the three, Bodies are formed with different Properties and Powers. We acknowledge, therefore, three ſimple Subſtances in Bodies, which are properly Elements, or Principles: One active, which may be termed *Fire*; and two paſſive, Water, and Earth. From the moſt ſimple Union, or Connection of theſe three, Salt ariſes, which is to be looked upon as the moſt ſimple of all mixed Bodies. The next to that is Sulphur, or Oil, made by the Union of the three Principles, and of Salt.

Thus far concerning the Principles of Bodies in general: We now proceed to conſider each of them in particular.

Fire considered as a Principle.

We reckon elementary Fire the firſt Principle of Bodies, as being that, from whence all the reſt receive their Activity. It is a ſimple and moſt ſubtile Body, in a continual ſwift Motion, filling, and eaſily permeating, the Pores of all other Bodies. Its immenſe Subtilty is evident from this, that it penetrates all Bodies whatſoever; and its ſwift Motion, from that Rapidity which it is capable of communicating to them. Its Force is in proportion to the Quantity of it any-where collected. In the Sun, which may be looked upon as a vaſt Congeries of this Subſtance, its Motion is moſt violent. In culinary Fires, the Quantity and Motion of it are not ſo great, but ſtill greater, than in ſpirituous and volatile Liquors, where it is hardly to be perceived, except when they are ſet on Fire. Not only all Motion, but, alſo, Heat, proceeds from it, which, as it exiſts in Bodies, is nothing but the exceſſive Motion of their Parts. It is, alſo, too ſubtile and active ever to be collected pure in Chymical Analyſes; where-ever it is found, it is always united with Water and Earth, in Salts and Sulphurs; and is ſometimes concentred with Bodies in ſo great Quantities, as conſiderably to increaſe their Weight, as is evident in calcined Antimony, in which there is an Addition made of almoſt a Fifth Part.

Water considered as a Principle.

Elementary Water is a ſimple, liquid, inſipid, inodorous, pellucid Subſtance. Its Fluidity is owing entirely to the Action of Fire, and, when that Action is very great, its Parts are actually divided, and the Whole turned to Vapour; but, when it is very ſmall, they cohere ſtrongly, and turn to Ice. This Element the Chymiſts call *Phlegm*, and it may be conceived to conſiſt of ſmall, ſmooth Particles, of an oblong or oval Figure, and perfectly rigid or inflexible. From the Minuteneſs of its Particles, it eaſily penetrates the Pores of almoſt all Bodies. An oval Figure ſeems more agreeable to the Fluidity and Motion of Water, than a ſpherical, and, likewiſe, to the Solidity we obſerve in Ice; the Points of Contact being too few, in ſpherical Bodies, to form ſo ſtrong a Cohelion. Were its Particles angular and flexible, they would be too weak to penetrate and diſſolve Salts, and would, likewiſe, be too much reſiſted; but, as their Surface is ſmooth, they can eaſily enter the Pores of Salt, and afterwards they eaſily ſeparate their Parts, that is, diſſolve them by their Rigidity, and oval Figure. The Want of Taſte or Smell in Water ſeems to proceed from the Smoothneſs, Obtuſeneſs, and Smalneſs of its Particles, which cannot vellicate the Nerves of the Tongue and Noſtrils. The Fluidity of Water ariſes from the Smalneſs, Smoothneſs, and Figure of its Particles, and from the eaſy Motion thereof by the Fire contained in their Interſtices. Without the Action of Fire ſeparating theſe Particles, and keeping them in continual Motion, their Fluidity would preſently be loſt, how much ſoever their Structure may diſpoſe them to it, and they would become one ſolid Maſs. On the other hand, if the Action of Fire upon them be very great, they are farther ſeparated from one another, and fly off in Vapour or Smoke. In fine, Water is tranſparent, becauſe its Pores are ſo diſpoſed, as readily to tranſmit the Rays of Light.

Earth considered as a Principle.

Elementary Earth is the ſame with the *Terra Damnata*, or Caput Mortuum, of the Chymiſts; being a ſimple, friable, porous Subſtance, without Smell or Taſte, conſiſting of Particles of no regular Figure, and altogether unfit for Motion. The Poroſity of Earth ſeems to ariſe from the irregular Figure of its Particles; and as theſe Particles often touch one another only by their Angles, the whole Maſs muſt neceſſarily be friable. The Want of Taſte and Smell ſeems to be owing to their Inaptitude for Motion.

In the Analyſes of Bodies, the laſt Thing is always this Principle of Earth; and, in their Compoſition, it ſeems to ſerve as a Baſis or Foundation for the other Parts of the Mixture; and to it the Drineſs, Solidity, and Hardneſs, of Bodies are, in a great meaſure, to be aſcribed.

Salt considered.

Salt, as has been ſaid, is a mixed Body; but I chuſe to introduce it immediately after the Principles, becauſe, in all the common Analyſes of Bodies, it is obtained entire, and a great deal of Pains and Accuracy is required to decompoſe it, or reduce it to its Principles. It is, alſo, the ſole Origin of the Taſte, Smell, and many other Properties of Bodies. It may be defined to be a mixed Body, formed by the Concretion of Fire, Water, and Earth, into a ſolid rigid Subſtance, ſoluble in Water, and fuſible by Fire. As its Particles may be conceived to cohere by large Surfaces only, Salt cannot be friable like Earth; but requires a conſiderable Force to ſeparate its Parts, which fly off from one another, like thoſe of Glaſs, with a ſenſible Noiſe. It becomes the Cauſe of Taſte and Smell, becauſe its Particles terminate in ſtrong Points, which vellicate the nervous Membranes of the Tongue and Noſe.

Salt is of three kinds, acid, acrid, or alcaline, and a third, compounded of the other two, called, in *Latin*, *Sal ſalſus*.

Acid Salt is a Congeries of inflexible ſolid Parts, of an oblong Figure, and pointed at both Ends. That its Particles are rigid and hard, appears from the Force, with which it divides and diſſolves ſolid Bodies; and its Sharpneſs and Pungency are evident from the Effect it has on the Tongue, different from the Corroſion of acrid Salts. Acid Salt is eaſily diſſolved by Water, and after this Solution its Particles are equally diſperſed thro' that Fluid, and have the ſame Motion with it. Hence it appears, that the Particles of both Subſtances have nearly the ſame ſpecific Gravity; and likewiſe that the Motion of the aqueous Parts is great enough to overcome the Coheſion of the Parts of Salt.

Concerning the Manner, in which the Particles of acid Salt are compounded of Fire, Water, and Earth; nothing can with Certainty be determined. It may be conjectured however, that ſeveral Particles of Water, being collected into one little Maſs, are cemented together by ſome Particles of Fire and Earth, lodged in the Interſtices left between them; and that all theſe, taken together, are diſpoſed in an oval Form, or that of two Cones joined by their Baſis. This Configuration, however, is not the ſame in all acid Salts; but the Differences may all be reduced to three; the nitrous acid, the muriatic, and the vitriolic.

The Word *Alcali* is derived from *Cali*, the *Arabic* Name of a Plant, from the Aſhes of which a Salt is obtained, proper for making Glaſs: And thence it came to be uſed for all Salts, got from the Aſhes of Plants, and afterwards for all Salts, and other Subſtances whatever, that ferment with Acids.

Acrid or alcaline Salt ſeems to be a Congeries of ſpherical Particles, with rough prickly Surfaces, becauſe of their great Diſpoſition to Motion, and their corroſive burning Taſte, the Points of their Surfaces acting on the nervous Papillæ of the Tongue, like ſo many Files, whereas acid Salt is only pungent. But then, by theſe Points, a larger Surface is expoſed to the Action of Fire, than could otherwiſe be; and thus the Particles of alcaline Salt are very volatile, or eaſily raiſed by a gentle Heat. The Origin of their Salt is probably from a certain Connection of acid Points, and terreſtrial Particles, becauſe, in many Operations of Chymiſtry, ſuch Salts ariſe from the Mixture of acid Salts, and Earth; as we ſee particularly in the Preparation of fixed Nitre, and Fomentation of Urine. Nitre, being diſtilled, leaves a compound fixed Salt behind, of the ſame Nature with Sea-ſalt, out of which, by a nicer Diſtillation, an acid Liquor may be extracted, without any volatile Salt, or at leaſt, but a very ſmall Quantity; but if the ſame fixed Salt be previouſly fermented, and then diſtilled, it yields a large Quantity of volatile Salt, and very little fixed Salt, or Acid; becauſe by Fermentation or Calcination the acid and terreſtrial Particles are intimately mixed, the acid Spicula entering the Pores of the Earth, and ſo forming new Molecules, which are denſe and cloſe towards the Centre, and prickly on the Surface, by the acid Points ſticking out. Such are the Particles of volatile Alcalis, of which if a great Number be joined together, they muſt cohere very ſtrongly, by means of their Points, and form Molecules of irregular Figures, in the Pores of which watry, earthy, ſulphureous, or acid Particles may be received and abſorbed. Hence it is that acid Salts are ſeldom pure; and as they are very often filled with Particles of Earth, they reſiſt the moſt violent Degree of Fire, and will ſooner melt than be raiſed by it. This is the true Nature of fixed alcaline Salt, ſuch as Salt of Tartar, or the Salts got from the Aſhes of Plants called Lixivial Salts. If they be impregnated with ſulphureous Particles, they continue very volatile, and are raiſed by a ſmall Degree of Fire; as we ſee in Salt of Urine, Hartſhorn, and others got from Animals. Acrid Salts eaſily melt, when expoſed to a moiſt Air, becauſe the Particles of Water contained in it readily enter their Pores. When thus melted, they become properly Lixivia, and are commonly termed Oils, as Oil of Tartar per Deliquium. Volatile alcaline Salts, diluted with Water, are called volatile urinous Spirits; ſuch as the volatile Spirit of Urine, of Hartſhorn, Blood, and others.

The *Sal Salſus*, or third Kind, is compounded of acid and alcaline Molecules united together; and the Figure of its Particles is principally produced by the Kind of Acid that enters its Compoſition. The Impreſſion theſe Particles make on the Tongue, is more dull and languid, than that made by acid or acrid Parts alone; becauſe the Molecules formed by the Union of theſe are larger in Bulk, and conſequently leſs diſpoſed for Motion; and therefore, though there is a greater Quantity of Aculei, or Points, in one of theſe Molecules than in the former, yet their Bulk makes them leſs capable of entering the Pores of the Skin, and vellicating the nervous Papillæ, than when they are in a diſjoined State. The Taſte of theſe Salts is termed ſaline, and varies according to the Thickneſs of the Spicula, their Number, and the other Parts that may be mixed with them. That this is the true Original of this kind of Salts, is evident, both from the artificial Compoſition thereof, from acid and acrid Particles blended together, and from the Reſolution of them into the ſame. Thus, by pouring Spirit of Nitre, of Sea-ſalt, or of Vitriol, on Salt of Tartar, new Salts are produced exactly of the ſame Appearance with Nitre, Sea-ſalt, or Vitriol; and, by analyſing theſe three Salts, the eſſential Salts of Plants, Sal Ammoniac, and others, an acid and alcaline Salt may be obtained, in ſome fixed, in others volatile.

Oil, or Sulphur, considered.

What the Chymiſts call Oil, or Sulphur, is not a ſimple Subſtance, but a Body compounded of Fire, Water, Earth, and Salt; but we chuſe to introduce it here, as it is moſt commonly ſeparated entire in the Operations of Chymiſtry, and is not reſolved without Difficulty into its component Principles. It may be defined to be a fluid, viſcid, inflammable, tranſparent Body, without Taſte or Smell, (though, by mixing it differently with Salts, theſe ſenſible Qualities are produced) compounded of Fire, Water, Earth, and Salt; and it may be conceived to conſiſt of many Flakes, or Flocculi, each of which is again made up of very ſmall flexible Filaments, formed of the four Principles before-mentioned, by Fermentation, as well in the Bowels of the Earth, as in the Bodies of Vegetables and Animals: Thus an aromatic Plant, growing in Water, will, by Diſtillation, yield an Oil, which could never have been obtained from the Water, in which it ſtood; and all Oils may by Art be reſolved into Water, Earth, and Salt. From theſe Filaments variouſly concreted ariſe the Flakes already mentioned, which are of different Thickneſſes; and in the Pores thereof is lodged the Element of Fire, which, alſo, runs in Rivulets through their Interſtices. Upon theſe depend the ſpecific Levity, Inflammability, and Fluidity of Oil; but, as, notwithſtanding the inteſtine Motion cauſed by the Element of Fire, the ſmall Flakes ſtill adhere, in ſome meaſure, together, this Fluid muſt be more viſcid than any other.

From what has been ſaid concerning the Nature of alcaline Salts, and the Figure and Structure of the oily Flocculi, it is eaſy to conceive, why all Alcalies diſſolve Sulphurs; for ſince the alcaline Particles are ſpherical and prickly, they cannot enter the Interſtices of the Flakes, without carrying away ſome of them from the reſt; and thus, by degrees, throughly diſſolving them. But the denſe, rigid, and pointed Molecules of Acids, being forced into theſe Interſtices, increaſe the Denſity, and ſtrengthen the Texture, of the Flocculi; and from the Diverſity of theſe, and of the acid Spicula mixed with them, ariſe the different kinds of Sulphurs. Sulphurs formed in the Earth of Fire, acid Salt, Water, and a very fine Earth, are termed Bitumens. Thus Bitumens diſſolved in a large Quantity of Water form the mineral Oils, or Petrolea. But if they are mixed with Earth and Salt, the ſolid Bitumens are produced, differing from one another in Degrees of Purity, according to the Quantity or Groſſneſs of the Earth, or different Degrees of Mixture. Thus foſſil Coals, Jet, Amber, and the common Bitumens, and bituminous Earths, are produced. If there be but a ſmall Quantity of Earth, and much acid Salt, the common mineral Sulphur, or Brimſtone, is formed. If the mineral original Bitumen *is* joined to a fuſible Earth, capable of Vitrification, it communicates to it a metallic Form; that is, the Sound, Brightneſs, Softneſs, Ductility, Malleability, and all the other ſenſible Qualities of Metals.

This Origin of mineral Bitumens may be confirmed by many Experiments: If a Mixture of equal Parts of Oil of Vitriol, and Oil of Turpentine, be digeſted together, for a conſiderable time, in a very gentle Heat, and afterwards diſtilled in a Retort, there will come over firſt a yellowiſh Liquor, reſembling Petroleum, both in Smell and Conſiſtence. What remains in the Retort, is, at firſt, a ſoft Bitumen, and afterwards turns into an hard black Maſs, eaſily inflammable, and, when burnt, ſmelling exactly like a foſſil Coal. But if the Diſtillation be continued, a white acid Liquor will next be obtained, which, by ſtanding, lets fall a grey Powder, which is true common Brimſtone, a yellow Subſtance of the like Nature adhering likewiſe to the Neck of the Retort; what is left behind being a black, ſhining, light Subſtance, diſpoſed in thin diſgregated Strata, like Talc, in which, by the Help of the Loadſtone, Iron may be diſcovered. Thus, therefore, all theſe Bitumens may be artificially produced; and the Analyſis of the natural ones further confirm the Manner of their Formation. Thus the Chymiſts have ſhewn, that Metals are nothing but bituminous Subſtances, which have undergone a long Digeſtion; for, by depriving them of their Sulphur, they are reduced to Aſhes, and then to Glaſs. This is eaſily ſeen in the imperfect Metals; for if any of them be expoſed to a long Heat, and eſpecially to the Rays of the Sun, collected by a large Burning-glaſs, the ſulphureous Principle flies off, and only a Calx, or Aſhes, will be left behind, which, in a more vehement Degree of Fire, are preſently vitrified; and, by reſtoring the Sulphur, this Glaſs may be again reduced to Metal.

The inflammable Subſtances in Animals and Vegetables conſiſt of a different Combination of the Principle of Sulphur, and acid Salt; for the Oil, or Sulphur, in theſe, is formed by a ſmall Portion of Earth joined to the elementary Fire, acid Salt, and Water: This Oil, when joined to an acrid Salt, produces Gums; when joined to a fine Acid, and a new Acceſſion of fiery Particles, it produces eſſential Oils, and inflammable Spirits; but if the Acids are more groſs, by reaſon of a larger Quantity of Earth joined to them, it forms Reſins, as we learn from the artificial Compoſition of all theſe Subſtances. By mixing Spirit of Wine with volatile Spirit of Urine, we obtain a mucilaginous Concretion, or thin Gum. Oil of Olives, and Salt of Tartar, melted together, makes a kind of Soap, or thick Gum; and if Spirit of Wine be digeſted for a long time with Oil of Vitriol, and then diſtilled, an inflammable Oil is obtained, reſembling in Smell, and other Qualities, the eſſential Oils of Plants, a true Reſin being left behind in the Retort.

In Animals this ſame oleaginous Principle forms the Fat, and other glutinous or gelatinous Subſtances; theſe laſt being

compoſed of an acrid volatile Salt and Oil, as appears from their Analyſis: But Fat is made of the ſame Oil, and acid Salt; for if Oil of Olives, and Spirit of Nitre, be mixed together, and digeſted, a Subſtance will be formed in every thing reſembling the Fat of Animals.

Sulphureous Subſtances found in Bodies are either fixed, or volatile. The fixed Sulphurs are either ſolid, ſuch as Fat, Reſin, and the Bitumens; or fluid, as Oils. Volatile Sulphurs are ſuch as fly off with a ſmall Degree of Fire, and have an Appearance compounded of that of Oil and Water. Such are inflammable Spirits obtained from the Flowers and Fruits of Plants.

The Mixture of Elements.

All Bodies conſiſt of the five Principles above-mentioned; and the Diverſity of Bodies ariſes entirely from the different Combination of them. Theſe Combinations, or Mixtures, of the five Principles are produced by Motion, and that Motion entirely by the Element of Fire. This Motion is ſometimes ſlow and inſenſible, as in the Growth and Maturation of Fruits; more lively and quick, as in the Fermentation of Muſt; or very vehement, as in the *Deflagration of Bodies*. All theſe Motions go by the general Name of Fermentation; and if they tend to the Deſtruction or Diſſolution of Bodies, they are termed Corruption.

The moſt ſimple, or leaſt compounded, Mixture of Principles is ſeen in the Fermentation of Salts, which conſiſt principally of Water and Earth; next of Sulphur, made up of Water, Earth, and Salt; then of the acrid Salts, both fix'd and volatile, with the eſſential Salts of Plants, and ſulphureous Bodies, whether ſolid or liquid. The Manner how theſe Mixtures are brought about, and the Changes ariſing from thence, will beſt be underſtood by Examples.

The Fruit of the Vine, juſt beginning to put on the Form of Grapes, is inſipid, or, at leaſt, taſtes only like Graſs. As it grows, a certain Acidity is diſcovered in it, which at firſt produces an auſtere Taſte; then an acerb one, in which State the Juice is termed Omphacium, which, in Diſtillation, yields a great Quantity of Water, ſome acid Liquor, and a ſmall Portion of Oil, a large Proportion of Earth being left behind. In this Juice, therefore, the auſtere and acerb Taſtes are owing to the acid Spicula, juſt breaking out through the earthy Parts, but not wholly diſengaged from them. When the Grapes come to be fully ripe, the auſtere Taſte is changed to a ſweet one, becauſe the Juice, being more thoroughly penetrated by the Element of Fire, is rareſied, and put in a more violent Motion, by which the Salts throw off their earthy Involucra entirely, and by a new Combination of theſe Salts, Water, and Earth, are formed Sulphurs, or Oils. But if any of the acid Salts remain after the Compoſition of the Sulphurs, they continue ſtill entangled by the Filaments thereof; and their ſharp Points, vellicating the nervous Papillæ of the Tongue, create that agreeable Taſte, which is perceived in Muſt. This Muſt in Diſtillation affords a great Quantity of Phlegm, next a pretty large Portion of an acid Water, ſome acrid or volatile urinous Salt, and a Quantity of thick Oil, much beyond what was gained by the former Diſtillation. Laſtly, from the Maſs that remains in the Retort, an acrid fixed Salt may be obtained by the common Method. However, even in this Juice of ripe Grapes, or Muſt, the Salts and Oils are not carried to the greateſt Degree of Fineneſs, and Part of them remain ſtill involved in the earthy Involucra. But if a large Quantity of it be ſet to ferment, the igneous Particles begin to act again, and by them this inteſtine Commotion is continued, till all the groſs Parts are either attenuated, or thrown out from the Liquor, and the Salts and Sulphurs perfectly ſet free from the earthy Parts, and intimately mixed with one another. The Liquor in this State is Wine, and the groſs Parts, that fall to the Bottom of the Veſſel, are termed Lees. The Briskneſs and penetrating Quality of the Wine ſeems to be owing to the large Proportion of the Element of Fire, which harbours among the Filaments of the ſulphureous Flocculi; and this Liquor being diſtilled, we obtain, firſt, a great Quantity of inflammable Spirit, then a copious Phlegm, next an acid Liquor with ſome Portion of an oily Spirit, a thick Oil, and, laſtly, a ſmall Quantity of Caput Mortuum, which will yield a little fixed Salt. In this Diſtillation a far leſs Quantity of acid Liquor is obtained, than from Muſt, which, on the other hand, yields no inflammable Spirit. If the Lees of Wine be well dried, and then diſtilled, they yield a very large Quantity of volatile urinous Salt, the acid Salts, combined with the ſulphureous and earthy Particles, being, by Fermentation and Heat, converted into alcaline Salts.

In the ſame manner, if green Peas or Beans be diſtilled, they yield a great deal of acid Liquor and Phlegm, with a ſmall Proportion of Oil. If they are firſt fermented with common Water, an inflammable Spirit is got from them in the ſame manner as from Wine; and if they are kept for ſome Months in a dry Place, they yield a volatile alcaline Spirit, without any acid Liquor, or, at leaſt, but very little. Whence it is evident, that acid Salt, by its Union with other Principles, is changed into Sulphur; and, by its Union with earthy and ſulphureous Particles, becomes an alcaline volatile Salt; as, by being driven into earthy Particles, alone, by the Force of Fire in Calcination, it is changed into a fixed Alcali.

It may be proper, upon this Occaſion, to obſerve, that the Salts of all Plants are not entirely alike, but differ from one another, not only as the Quantity of Sulphur, Water, or Earth, which is joined to the Acid, is greater or leſs; but, alſo, according to the original Nature of the Acid which enters their Compoſition. Acid Salts, as we have already ſaid, are of three Kinds, muriatic, nitrous, and vitriolic. Muriatic Salts, ſuch as Sea-ſalts, and Sal Gemmæ, being cryſtallized, put on a cubic Figure, the Particles thereof appearing to be formed of two quadrilateral Pyramids, joined together by their Baſes. Nitrous Cryſtals repreſent Priſms with ſix Sides, formed by the Juxtapoſitions of two triangular Pyramids; and Cryſtals of Vitriol ſeem to conſiſt of two hexagonal Pyramids, as far as can be judged by the Particles thereof, when carefully ſeparated from all Metals. Theſe original Salts, combined with others, form compound Salts, of almoſt all Kinds. Thus, in the Vegetable Kingdom, the different Sorts of Vinegars are nothing but ſome original acid Salt diſſolved in Phlegm. The eſſential Salts of Plants obtained without Fire conſiſt of ſome Acid joined with Particles of Earth, or of the other Principles. Sal Ammoniac ariſes from the Union of acid and volatile alcaline Salts. Fixed Alcalies are only the acid Spicula ſtruck into earthy Molecules; and volatile Alcalies conſiſt of the ſame Acid, joined to very fine Particles of Earth and Sulphur, ſo as to form prickly Globules. Moreover, the ſame Varieties of acid Salts are to be met with in Vegetables, that are found in Minerals. Thus the eſſential Salts of Pellitory of the Wall, Borage, wild Cucumber, and the like, are nitrous; and, when thrown upon burning Charcoal, they fulminate like Nitre. The fixed Salts of Carduus Benedictus, Glaſſwort, and Spurge, are like Sea-ſalt, their Particles having the ſame cubic Figure; and, when thrown upon burning Charcoal, they decrepitate. The Cryſtals of Tartar are like thoſe of Vitriol; and that they are formed by a vitriolic Acid, appears from the ſulphureous Smell of Tartar, when artfully calcined. Beſides the ſaline Compounds already mentioned, other Mixtures are formed in Plants, ſuch as Gums, Reſins, Honeys, and the like. Gums are ſomething between Acid and Oil, being an acid Salt, ſo fixed in the Earth, as that the greateſt Part of it is changed to an Alcali, the other into Oil; ſo that the Mixture ariſing from thence is an oily Salt, reſembling the ſaponaceous Concretes of the Chymiſts, made of Oil of Olives, and a Lixivium of Tartar, or the mucilaginous Bodies formed of Spirit of Wine, and the volatile Spirit of Urine. And thus we ſee, that all Seeds which are oily when ripe, are in the Beginning only a Mucilage, or imperfect Oil. Reſins conſiſt of Oil and Acid, and accordingly are artificially produced by mixing Spirit of Vitriol with Spirit of Wine, or of Turpentine. They are either ſolid, or liquid; but theſe differ from one another only in the Proportion of Earth, that enters their Compoſition. Melleous Juices, which either exude ſpontaneouſly from Plants, ſuch as Manna, or are obtained by Art, as Sugar, are eſſential Salts, conſiſting of a Mixture of Acid and Alcali, with a large Proportion of Oil.

The Mineral Kingdom furniſhes us with a great Variety of Inſtances, of the way how the Principles of Bodies may be combined together. The Lime-ſtone and Parget are ſo framed, that, by being calcined, a vaſt Number of Cells are opened by the Fire, into which Water eaſily enters, with an Hiſſing or Colliſion of the included igneous Particles. If the Water remain long in theſe little Receptacles, nitrous Parts are formed, as we ſee in old Walls, built with theſe Materials, from which Nitre may always be obtained. The greateſt Part of this Nitre, by Diſtillation, is changed into an acid Spirit; but, by Calcination, turns to an alcaline Salt. And it may be, that the Nitre of the Antients, or that alcaline mineral Salt, which was dug out of the Earth in *Egypt*, and other Countries, and is obtainable by Art from mineral Waters, was nothing but Nitre calcined by the Heat of the Earth, and ſo converted into a fixed alcaline Salt. The vitriolic Acid, joined with different metallic Subſtances, produces all the Kinds of Vitriol; with an aſtringent Earth, it forms Alums; and with the Principle of Fire, common Brimſtone, which, by Deflagration, may be again converted into Oil of Vitriol, the other Principles flying off. Brimſtone may, likewiſe, be artificially produced by uniting the Principle of Fire to any vitriolic Acid.

The like Mixture of the Principles of Bodies may be obſerved in the Animal Kingdom. Chyle and Milk contain a latent Acid; which eaſily diſcovers itſelf by Putrefaction; but this acid Salt, having undergone a due Fermentation, or ſome other Action analogous to that in the animal Body, is changed into a volatile Alcali, obtainable in great Plenty from the Blood, Serum, Bile, Urine, and other Juices. In an healthful Body, however, theſe volatile Alcalies are never perfectly formed, the animal Salts being more of the Nature of Sal Ammoniac, with a Mixture of earthy and oily Parts, to which Mixture the glutinous Quality of the Blood and Serum is owing. By Putrefaction, or Calcination, all animal Liquors are changed, ſo as to

afford

afford perfect volatile Alcalies, as has been evidently shewn by Experiment. *Geoffroy.*

PRION, πρίων. A Saw, or *Terebra.*

PRISIS, πρίσις, from πρίω, to saw. A Saw, or *Terebra* of the Trepan. A Sawing. Or a Grinding of the Teeth.

PRISMATA, πρίσματα, from πρίω, to saw. Saw-dust, or Raspings.

PROBARBIUM. The first Appearance of the Beard on the superior Lip.

PROBLEMA, πρόβλημα, from προβάλλω, signifying, among other Actions, to object, or lay some Hindrance in the Way, is any kind of Obstacle laid to obstruct an Entrance into any Place, or guard the Avenues leading to it. In this Sense the Term πρόβλημα is used by *Hippocrates*, *Lib.* περὶ γυναικ. φύσ. and *Lib.* 2. περὶ γυναικ. to signify the Membrane which, growing to the Neck and Orifice of the Uterus, obstructs the Passage of the Semen, and so prevents Conception. This Membrane, he says, will offer itself to the Touch of the introduced Finger.

PROBOLE, προβολὴ, from προβάλλω, to project, is a Projecture, or Prominence, of any kind. Thus, *Lib. de Artic. Hippocrates* observes, that, in other Cattle besides Oxen, προβολὴ τῦ χείλεος λεπτὴ, "The Prominence of the Lip is but thin," and the upper Jaw is but thin, and therefore they can feed upon short Grass; but in Oxen it is quite otherwise. And, *Lib. de Vulneribus Cap.* προβολὴ τῆς κεφαλῆς ἐκ τῦ ἔμπροσθεν, "The Prominence of the Head towards the anterior Parts," is explain'd by the Author to be when the round Eminence [ἐξέχον σφαῖρον] of the Bone juts out beyond the rest.

PROBOSCIS. The Trunk of an Elephant, and of some Insects.

PROCARDION, προκάρδιον. The Pit of the Stomach.

PROCATARCTICA CAUSA. The antecedent, pre-existent, or predisposing Cause of a Disease. See CAUSA.

PROCESSUS, in Anatomy, is a Process, Protuberance, or Eminence of a Bone. In Chymistry, a Process is properly a Series of Operations, tending to the Production of something new.

PROCHEILA, πρόχειλα. The Extremities of the Lips.

PROCHYMA, πρόχυμα. Must which flows from the Grapes spontaneously, before they are pressed.

PROCIDENTIA. The falling of any Part out of its proper Place. It is the same as PROLAPSUS.

PROCLESIS, πρόκλησις, from προκαλέω, to provoke, call forth, signifies, in *Hippocrates*, a provoking or inviting the Senses to the external Parts, in order for their Gratification. Thus we read, *Lib. de Liquid. Usu*, διὰ τῦτο καὶ ἀπὸ τῦ θερμῦ ἡδοναὶ καὶ προκλήσιες, ἀπὸ δὲ τῦ ψυχρῦ ἀλγηδόνες καὶ ἀποτρέψιες· "For this Reason, hot Water gives Pleasures and Allurements "to the Senses; but cold Water, on the contrary, creates "Uneasiness and Aversions." Here ἀποτρέψεις, which import a Retreat, Shrinking back, and Retirement, as it were, of the Senses inwards, is set in Opposition to προκλήσιες in the Sense before given. The Word occurs, also, *Lib.* περὶ εὐχυμ. in the following Passage; νομίζει γὰρ τῦτο βίη εἶναι ἐς πρόκλησιν θεραπηίης· "For he thinks this necessary towards the inviting or pro-"curing Health." But it is here to be observed, that the printed Copies read πρόσκλησιν, which cannot much alter the Sense.

PROCONDYLOS. The first Joint of every Finger.

PROCONIA ALPHITA, προκόνια ἄλφιτα, *Lib.* 2. περὶ γυναικ. as explained in *Galen's Exegesis*, signifies Meal of Barley prepared while the Grain is new and tender; and the Reason why it was so called, was, because it was prepared πρὸ τῆς τῦ κώνυ στάσεως, "Before the Erection of the Cone," or before the Barley was erected into Piles of a conic Figure. For κῶνος, according to *Galen*, is a wooden Structure erected in Areas, and especially in humid Places, about which the Corn and Fruits were piled up in a tapering Figure, or in the Form of a Cone. Some, however, as *Galen* says, in *Exeges.* by προκόνια ἄλφιτα understand τὰ τῶν ἀφρύκτων μόνα, "Nothing but Meal made of "Barley not torrefied."

PROCTOS, πρωκτός. The Anus.

PRODROMUS, πρόδρομος, from πρὸ, before, and τρέχω, to run. It imports the same as PROCHYMA. Certain Winds which blow before the Dog-days, are called *Prodromi.* See ETESIA. *Prodromus* is, also, any Circumstance which precedes a Distemper, and indicates its Approach.

PROEGUMENE. See CAUSA.

PROFLUVIUM. A Flux of any kind.

PROFUNDUS MUSCULUS. A Name of the Muscle otherwise called PERFORANS MANUS.

PROGERMINUS ABSCESSUS. An Abscess arising from a viscid, and almost corrupted Phlegm. *Castellus* from *Marc. Aurel. Severinus.*

PROGLOSSIS, πρόγλωσσις. The Tip of the Tongue.

PROGNOSIS, πρόγνωσις, from πρὸ, before, and γινώσκω, to know. The Prognostic of a Distemper. See FEBRA.

PROHIBENS. The same as CONTRAINDICANS. See ANTENDEIXIS.

PROJECTIO. Projection. A chymical Term, importing the casting of any Substance, to be calcined, into a Crucible, by a Spoonful, or a small Quantity, at a time. Projection is, also, an Addition of a small Quantity of something to a greater Quantity of a Metal, in order to meliorate the Metal. *Wilson's Chymistry.*

PROJECTURA. An *Apophysis. Blancard.*

PROLABIA. The same as PROCHEILA.

PROLAPSUS ANI. See ANUS.

PROLAPSUS UTERI. See UTERUS.

PROLECTATIO, is defined, an Extraction, by the Extenuation of the most subtile Parts, in such a manner, that these, being rarefied, separate spontaneously from the more gross Parts. *Rulandus.*

PROLEPTICOS, προληπτικός. Anticipating; an Epithet of the Fever, the Paroxysms of which return sooner than they ought to do regularly.

PROMALACTERION, προμαλακτήριον. The first Apartment in the antient Baths, where the Body was softened, before going into the Bath.

PROMANUS. The Thumb.

PROMETOPIS, προμετωπὶς. The Skin of the Forehead.

PRONATORES. The Name of two Muscles of the fore Arm. One is the

PRONATOR TERES, SIVE OBLIQUUS.

This is a small Muscle, broader than it is thick, situated on the upper Part of the Ulna, opposite to the Supinator Brevis, with which it forms an Angle like the Letter V.

It is fixed to the internal Condyle of the Os Humeri, partly by fleshy Fibres, and partly by a Tendon common to it with the Ulnaris Internus; thence it passes obliquely before the Extremity of the Tendon of the Brachiæus, and reaches to the middle Part of the convex Side of the Radius, where it becomes flat, and is inserted below the Supinator Brevis by an Extremity almost wholly fleshy.

It is called the Teres, to distinguish it from the Quadratus. The Name of Pronator Superior would be more proper, but that of Pronator Obliquus is the most proper of all.

This Muscle can have no other Action but that of Pronation, in the different Situations of the Radius, whether that Bone be in a middle State between Pronation and Supination, or in the greatest Degree of Supination: And, in this Case, though it is but a small weak Muscle, it overcomes the Supinator Longus.

PRONATOR QUADRATUS SIVE TRANSVERSUS.

This is a small, fleshy Muscle, nearly as broad as it is long, lying transversly on the Inside of the lower Extremity of the fore Arm.

It is fixed by one Side, or Edge, in the long Eminence, at the lower Part of the internal Angle of the Ulna; and, by the other, in the broad, concave Side of the lower Extremity of the Radius.

It is wholly fleshy, without any Mixture of tendinous Fibres. It is situated transversly, but that Extremity which lies on the Radius, is nearer the Carpus, than that on the Ulna. It is of a moderate Thickness, and the Fibres nearest the Surface are the longest, the rest decreasing in proportion as they lie near the Interval between the two Bones, and the interosseous Ligament.

It has a ligamentary, or tendinous Frænum, belonging to it, one End of which is fixed in the interosseous Ligament, the other in the inner Edge of the Basis of the Radius.

The Pronator Quadratus is capable of no other Motion but Pronation, and it acts with much more Force than its Congener, the Pronator Teres; both because of the Number and Direction of its Fibres; and because it acts upon the Radius near the lower Extremity, where its Effects, in Pronation, are, much greater, than if it acted near the Head of that Bone. The Fibres lie almost in the same Direction in which the Bone moves; and in this it has the Advantage, not only over the other Pronator, but over all the Supinators, the Biceps itself not excepted.

The Fibres, of which this Muscle is composed, are so disposed, as that the longest adhere to the internal Angles of both Bones of the fore Arm; the shortest lie nearest the interosseous Ligament; and the intermediate Fibres are longer or shorter, according to their greater or less Distance from the Ligament.

By these different Degrees of Length, the whole Number of Fibres is advantageously disposed, and their Action rendered uniform. In the greatest Degree of Supination, the Extremity of these Fibres, inserted in the two Bones, make a very oblique Plane, which becomes almost strait, in the greatest Degree of Pronation. *Winslow's Anatomy.*

PRONERVATIO. A Tendon, or tendinous Expansion. *Castellus.*

PRO-

PRONOMÆA, προνομαία. The ſame as PROBOSCIS.

PROPHASIS, πρόφασις. The Cauſe, or Occaſion, of a Diſorder.

PROPHYLACE, προφυλακὴ; PROPHYLAXIS, προφύλαξις; and PROPHYLACTICE, προφυλακτικὴ, from πρὸ, before, and φυλάσσω, to preſerve. The Method of preſerving Health, and averting Diſeaſes. See INDICATIO.

PROPOLIS. Bee-bread. This is a rude, wax-like, and thick Matter, or Glew, found in the Entrance of Bee-hives. It is gently heating, abſtergent, and attracting: It ſoftens indurated Parts, alleviates Pains, and induces Cicatrices on Ulcers. *Schrod.* See AMBRA.

PROPOMA, πρόπωμα, or προποτισμός. A Potion prepared of one Sextary of deſpumated Honey, and four of Wine, boiled together. *Paulus Ægineta, Lib. 7. Cap.* 15.

PROPTOSIS, πρόπτωσις. The ſame as PROLAPSUS; a falling out of the natural Situation; from προπίπτω, to fall out.

PRORA. The Occiput. *Os Proræ* is the *Os Occipitis*. *Sutura Proræ* is the Lambdoidal Suture.

PRORRHESIS, πρόρρησις, from πρὸ, before, and ῥέω, to tell. A Prediction, or Prognoſtic.

PROSARMA, προσάρμα, from προσαίρω, to offer. Aliment.

PROSARTHROSIS, προσάρθρωσις. The ſame as ADARTICULATIO.

PROSCARABÆUS. Offic. Mouff. Inſect. 162. Jonſ. de Inſect. 74. Mer. Pin. 201. *Scarabæus unctuoſus*. Schrod. 5. 345. *Pinguiculum*. Agricol. *Meloch*. Paracelſ. THE OIL-BEETLE.

It is to be found creeping about every-where by the Sides of Paths, and in Woods, in the Months of *May* and *June*; and the Parts uſed in Medicine are the Inſect itſelf, and its oily yellowiſh Liquor.

The Oil-beetle is much of the Nature of Cantharides, forces Urine and Blood, and is of extraordinary Efficacy againſt the Bite of a mad Dog. Taken in Powder, or preſerved, it cures the Vari, or wandering Gout, as we are aſſured by *Wierus*. The Liquor is, by ſome, eſteemed of Efficacy in Wounds; it is an Ingredient, alſo, in Plaiſters for the Peſtilential Bubo and Carbuncle, and in Antidotes; an Oil is prepared by Infuſion of the living Animals in common Oil, which ſome uſe inſtead of Oil of Scorpions. *Dale* from *Schroder*.

PROSCEPHALÆON, προσκεφάλαιον, from πρὸς, to, and κεφαλὴ, the Head. A Pillow, to ſupport the Head, or a diſordered Limb.

PROSCLYSMA, πρόσκλυσμα. An Aſperſion, or Sprinkling, of any Part with a Fluid.

PROSCOLLEMA, προσκόλλημα. An Agglutination.

PROSCRIPTIO. A Retardation. *Rulandus*.

PROSECHES, προσεχής. The ſame as SYNECHES, or CONTINENS.

PROSERPINACA. A Name for the *Polygonum Latifolium*.

PROSERPINALIS HERBA. A Name, in *Marcellus Empiricus*, *C.* 10. for the *Dracontium*.

PROSOEMA, πρόσοιμα. The ſame as PROSARMA.

PROSOPITES, προσωπίτης. The ſame as ARCION. The Burdock. *Paulus Ægineta, L. 7. C.* 3.

PROSPHEROMENA, προσφερόμενα, (from προσφέρω, to bring, or offer; properly, in a medicinal Senſe, Food, or Aliment, are uſually ſpoken of ſuch Things as are offered to the Sick for their Support and Nouriſhment; but, however, often ſignify the external Apparatus neceſſary to the due Treatment of a diſeaſed Part; or, in ſhort, whatever a Surgeon ought to be provided with when he undertakes a Cure. *Hippocrates, Lib. de Medico*. Προσφερόμενα, in the more uſual Senſe, as ſignifying Food offered, are alſo called προσοίσματα (*Proſoiſmata*), and προσοισέα (*Proſoiſtea*); as in that Paſſage, *Lib. de Locis in Homine*, ᾗ ὁκόταν κρατέηται τὸ σῶμα ὑπὸ τῶν προσοισμάτων· "Whenever the Body is overcome by (is too weak to concoct) "the Foods exhibited;" πρόσοισμα, a few Lines farther, is alſo ſpoken in the other Senſe of a hot Bath; and *Lib. de R. V. I. A.* near the Beginning, παροισέα comprehends all manner of Aſſiſtances offered to the Sick, whether of Food, or Medicine. Again, *Epid.* 3. *Sect.* 3. we read, τοῖσι δὲ προσφερομένοισι δυσκόλως ὑπακούοντα· "They [the Bodies of the Patients] were not "eaſy to be affected, or wrought upon, by the Things which "were exhibited;" where *Galen*, on the Place, ſays, that by προσφερόμενα we are to underſtand all manner of Helps, and Aſſiſtances, in general; and, particularly, Meats and Drinks. In 2 *Aph.* 33. προσφοραὶ are expounded, by *Galen*, τῶν σιτίων προσφοραί, "Exhibitions of Food."

PROSTASIS, πρόστασις, from προΐσταμαι, to preſide in Power or Dignity, is uſed, by *Hippocrates*, in a particular Senſe, for that Humour, which prevails and predominates over the reſt. Thus, we read, 6 *Epid. Sect.* 5. *Aph.* 15. γλῶσσα ὁμόχρως τῇσι προσάσῃσι, "The Tongue is of the Colour of the "prevailing Humour." *Galen* here confeſſes it to be an obſcure Word, but underſtands it of the Humour with which the Tongue appears, chiefly, impregnated. *Proſtaſis, Lib. de Locis in Homin.* as derived from προσίστημι, to ſtand by, to adhere; ſignifies no more than an Adheſion, or Accreſcence, in that Expreſſion, ἀεὶ τομαὶ πυκναὶ ἐοῦσαι πρόστασιν ποιέουσιν τῇ σαρκὶ πρὸς τὸ ὀστέον, "Often-repeated Sections cauſe Fleſh to come, or grow "up, about the Bone."

PROSTATÆ. The Proſtate Glands; from προΐσταμαι, to be adjacent to. See GENERATIO.

PROSTETHIS, προστηθὶς. The anterior Part of the *Thorax*; or the fleſhy Parts in the Concavities of the Hands, and Feet, and betwixt the Fingers.

PROSTHESIS, πρόθεσις, from προτίθημι, to add. That Part of Surgery which ſupplies what is deficient.

PROSTHETA, πρόσθετα, from προτίθημι, to apply, ſignify, in *Hippocrates*, ſubdititious Medicines, whether Suppoſitories, or Peſſaries. *Proſtheton*, προσθετὸν, frequently ſignifies a Suppoſitory; and προσθὲς, or προστιθέναι ἐν ἠρίῳ, is often ſpoken of a Peſſary, applied in Wool, throughout the whole Treatiſe *de Morb. Mul.* Sometimes, inſtead of προσθετὸν, we read πρόσθεμα, in the ſame Senſe; and once, *Lib.* 1. περὶ γυναικ. we meet with προσθέσιας, for προσθετὰ; tho' προσθέσιες, in other Places, ſignify Exhibitions of Food; and προστιθέναι is often uſed with relation to the ſame.

PROSTHEMENE, προσθεμένη, in *Hippocrates*, is a Woman under the Application of a Peſſary. Thus, 1 *Epid. Ægr.* 4. προσθεμένη δὲ ταῦτα μὲν ἐκαφίσθη, "Being treated with a "Peſſary, theſe (Symptoms) were alleviated." *Galen*, on this Place, ſays, "The Signification of this Word, προσθεμένη, "when it is joined with βάλανος (*Balanus*), a Glans, or Sup"poſitory, is obvious; but when it is uſed without an Addi"tion, we are either to underſtand it of βάλανος, as ſome will "have it; or of a lenitive and antiphlogiſtic Peſſary."

PROSTHION, πρόσθιον. The Penis.

PROSTOMION, προστόμιον. The Part where the Lips meet, when cloſed.

PROTARCHI MEDICAMENTUM. The Name of a Medicine, recommended by *Celſus*, againſt the *Scabies*, *L.* 5. *C.* 28. *Sect.* 16.

PROTASIS, πρότασις, from πρότειμι, to ſtretch, or put forth, or propoſe, is, properly, a Propoſition, or Problem, offered to be diſcuſſed; but πρότασις πνευμάτων, *Lib. de R. V. I. A.* "Stretchings of the Spirits (Breath)," are expounded, by *Galen*, on the Place, by Obſtacles and Interruptions of Reſpiration. For τὰ προτεταμένα πνεύματα, "Breath drawn out "in Length," he ſays, are τὰ διὰ ἐγκοπτόμενα, "ſuch as is, "in a manner, interrupted;" and which, in another Place of the ſame Book, is deſcribed as πνεῦμα προσπταῖον ἐν τῇ ἄνω φορῇ, "Breath which ſtrikes, or impinges, in its Paſſage upwards." It is to be obſerved, that all the vulgate Copies of *Hippocrates* read πρόσταστις (*Proſtaſies*); but thoſe of *Galen* have it, πρότασις, (*Protaſies*) as above.

PROTEUS. The Name of a *Collyrium*, deſcribed by *Paulus Ægineta, L.* 7. *C.* 16.

Proteus was repreſented, by the antient Poets, as a God, the Son of *Oceanus* and *Thetis*, who could transform himſelf into any Shape. Hence *Morton*, in his *Pyretologia*, calls the irregular Appearances of intermitting and remitting Fevers, *Proteiform*. And certain it is, that, in conſequence of the Violence of the Symptoms, when almoſt the whole Syſtem is briſkly ſtimulated to a Conflict with the peccant Matter, theſe Fevers often reſemble moſt other Diſeaſes, eſpecially of the acute Kind, but yield to the Efficacy of the Bark; tho', at the ſame time, they often prove fatal, if that Medicine is not exhibited: For, among the various Symptoms which generally accompany theſe Fevers, there is not one, which does not, ſometimes, rage with ſuch Violence, as not only to endanger the Life of the Patient, but, alſo, ſo totally to conceal and oppreſs the Form of the Fever, in its various Stages, of Chilneſs, Heat, and Sweat, that it can neither be diſtinguiſhed by the Urine, the Temperament, the Pulſe, or any other uſual Method; but, appearing under the Maſk, as it were, of a terrible Chilneſs, an inceſſant Vomiting, a Diarrhœa accompanied with Gripes, a Cholera Morbus, a Colic of the Stomach, a periodic Hemicrania, an Apoplexy, a Syncope, a Rheumatiſm, univerſal Spaſms, a Pleuriſy, a Peripneumony, a punctory Pain of the Side, or ſome other Diſorder, frequently miſleads the Phyſician from the true Intention of Cure. In this Caſe, an Attempt may, indeed, be made, to remove the Symptoms, by proper Medicines, but all in vain; for, as the febrile Ferment is neglected, on the Approach of the next Paroxyſm, the former, or worſe Symptoms, unexpectedly recur, the Phyſician labours in vain, and the Patient falls a Victim, or, at leaſt, ſuſtains a conſiderable Injury, by the Ignorance or Careleſſneſs of his Phyſician.

When, in conſequence of the highly deleterious Quality of the Poiſon, the animal Spirits are ſo weakened, that they can by no means expand themſelves, after the firſt Shock, the Shivering,

which, generally precedes the firſt Approach of theſe Paroxyſms, is ſo long protracted, that the Patient, ſpent with frequently recurring Deliquiums, at laſt falls a Sacrifice to his Diſorder. Internal and external Medicines, are, in the mean time, uſed in vain, to rouſe the languid Principle of Life; but the Fever cannot, even by the moſt accurate Obſerver, be diſcovered, from any Signs, either in the Urine, the Heat, or the Pulſe.

In like manner, when, in the firſt Stage of the Paroxyſm, the poiſonous Fomes only oppreſſes the Spirits, ſo that they cannot expand themſelves beyond their uſual Sphere, the Patient without any Signs of a preſent Fever, complains of a Nauſea, Sickneſs, and Vomiting, till the Poiſon being ſubdued by the *Peruvian* Bark, or ſome other Antidote, the Spirits are reſtored to their natural State.

Sometimes, about the Beginning of the Paroxyſm, the febrile Poiſon is convey'd to the Glands of the Inteſtines, and excites a Flux, accompanied with Gripes, or a Dyſentery. But when the Spirits are long oppreſſed in an uniform manner, theſe Symptoms, though continual, are at ſtated Periods augmented, become periodical, without any manifeſt Signs of a Fever, and cannot be removed by the Efficacy of Opium and Aſtringents, till, by a Mixture of the *Peruvian* Bark with Laudanum, the Cauſe, or febrile Ferment, which contaminates the whole Maſs of Blood, is removed, together with all the Symptoms ariſing from it.

When the Poiſon partakes of an emetic, and at the ſame time, a cathartic Quality, the Patient is ſeized with frequent Vomitings and Purging; and, unleſs the Spirits, by their due Expanſion, throw off the Virulence of the Poiſon in the firſt Stage of the Paroxyſm, a Cholera Morbus is by that means formed, whilſt the Fever, in the mean time, can neither be diſcovered by the Pulſe, the Urine, nor the Heat. The Stomach, in the mean time, or the Inteſtines, or both together, being ſphacelated by the intenſely poiſonous Acrimony of the Humours, the Patient ſoon dies; or, at leaſt, after a deluſive and fallacious Reſpite, when the next Paroxyſm approaches, the ſame violent Symptoms are again produced by the Poiſon, unleſs ſuch a Misfortune is prevented by a ſeaſonable Exhibition of the Bark.

By the like Degree of Virulence in this Poiſon, I have frequently obſerved Patients, eſpecially ſuch as laboured under long and confirmed Fevers of this Kind, after the Form of the legitimate Fever was loſt, ſo ſpent with a perpetual Nauſea, Sickneſs, Vomiting, colliquative Sweats, hyſteric Suffocations, and other like Symptoms, affecting the nervous Syſtem, that they ſeemed juſt about to die; and theſe, though incurable by any other means, I have ſpeedily recovered by a due Doſe of the Bark.

Every one converſant in the Practice of Phyſic knows, that violent ſpaſmodic and lancinating Pains, equal to thoſe excited by Poiſon, frequently accompany the firſt Attacks of legitimate intermittent Fevers, eſpecially thoſe of the quartan Kind, during the Shivering and Rigor, till the Spirits, being forcibly expanded and agitated, become capable of eliminating the acting Poiſon. The febrile Flame being by this means rouſed in the Maſs of Blood, the painful Spaſms gradually ceaſe. But, when the Spirits are not only depreſſed by the Force of the Poiſon, but, alſo, forced into a kind of exploſive State, I have, in conſequence of this, found the whole Body not only for a long time continually cold, and without any Mark of a Fever, but, alſo, vellicated and twitched by univerſal violent and flitting Spaſms. Nor is it to be wondered at, if, as it often happens, the Patient ſpent with perpetual Sickneſs, Vomitings, and Deliquiums, ſoon becomes deſirous of Death, unleſs languiſhing Nature is ſeaſonably aſſiſted by Art.

The Spirits, alſo, in conſequence of their natural Weakneſs, an Obſtruction, and eſpecially Cold, or any other evident Cauſe, are frequently forced into a kind of exploſive State; by which means, ſome particular Parts, eſpecially thoſe of the Thorax, ſuch as the Pleura, the Diaphragm, or the Stomach and Inteſtines, are vellicated and afflicted with ſpaſmodic Pains. The Patient, in conſequence of the intenſe Pain, ſhivers perpetually, and is ſpent with frequent Deliquiums, Suffocations, and Vomitings, without any ardent Mark of a Fever; he diſcharges clear Urine, and without any Pulſe he is at the Point of Death, till the Spirits, affected by the Poiſon, being expanded either by Nature or Art, again rouſe the Principle of Life in the Body. This Diſorder can only be diſtinguiſhed from a Cholera Morbus, a Pleuriſy, or a Peripneumony, by the want of a Cough, and the Privation of the Pulſe, by the exceſſive Vomitings and Pain, by the Deliquiums, and the Coldneſs of the Extremities.

I have, alſo, frequently known Patients complain of a punctory Pain in one or other of their Sides: But, in theſe, I could not for ſeveral Days diſcover any of the Marks of a Fever, except that the Pulſe was ſomewhat too quick. But after by Veneſection, and the Uſe of Laudanum mixed with Alexipharmics, theſe Spaſms were mitigated, and by that means the natural elaſtic Force of the Spirits increaſed, the Signs of a febrile Flame in the Maſs of Blood ſoon diſcovered themſelves. The Urine was tinged and turbid, the Pulſe became equally ſtrong and quick, the whole Body was render'd hot, a violent Thirſt ſeized the Patients, and Aphthæ covered their whole Tongues and Mouths. But directing my Intentions to the febrile Flame, and the Exacerbation of the periodically returning Pain, by a ſufficient Quantity of *Peruvian* Bark mixed with Laudanum, and exhibited in the Intervals between the Paroxyſms, I ſubdued the Poiſon, and totally freed the Patients from their Fever and Pain.

I have often with Surprize obſerved, that, after the ſubduing of the febrile Poiſon, in ſome meaſure brought about by the Expanſion of the Spirits, when by a ſtrong and quick Pulſe, an intenſely red and turbid Urine, the Heat of the Body, and other Signs, the Fever manifeſtly diſcovered itſelf, the Joints were affected with theſe ſpaſmodic Pains, which returned at ſtated Periods, like a Rheumatiſm removed from Place to Place, and produced a Tumor and Heat in the Parts affected, by means of the Efforts of the Spirits endeavouring to expand themſelves in theſe Parts: But I always happily removed theſe Pains by due Veneſection, and a copious Uſe of the *Peruvian* Bark, exhibited between the Paroxyſms.

Every Phyſician knows, that, on the firſt Approach of legitimate intermittent Fevers, the Brain is affected, not only from the Vertigo, and the Oppreſſion and Diſturbance of the Spirits by the active Poiſon, but, alſo, from the acute and violent Pains ariſing from the Effort of the Spirits endeavouring to expand themſelves in the Membranes of the Brain. But ſometimes the Spirits are at this Period of the Fever ſo oppreſſed and diſturbed, that the Patient, like one under an Apoplexy, lies, during the whole Paroxyſm, without any Signs of the Fever; and the ſame Symptoms often return with the ſucceeding Paroxyſm. But, though we are to endeavour the Mitigation of theſe Symptoms by Veneſection, Veſicatories, and the other Remedies appropriated to the Cure of Apoplexies, yet their Return cannot be prevented without the Uſe of the Bark.

I have, alſo, obſerved a periodic Hemicrania produced by an Effort of the Spirits to expand themſelves in the Membranes of the Brain. But this Symptom I totally removed in two Days time by Veneſection, and the Uſe of the Bark; though, for its Removal, I had, for ſome Weeks before, in vain uſed Veneſection, Veſicatories, Emetics, Cathartics, Errhines, and Maſticatories. *Morton. Pyretologia.*

The above-quoted Author gives a great Number of Caſes, in Confirmation of this Doctrine, which are very much worthy of Peruſal, becauſe this Subject is of infinite Importance in the Art of Healing. See *Exercitatio* 1. *Cap.* 9. and *Exercitatio* 2. *Cap.* 9.

PROTMESIS, *πρότμησις*. The Navel of a Child, when firſt cut. According to *Pollux*, it ſignifies the ſame as *Lumbus*, a Loin.

PROTOGALA. Beeſtings; the firſt Milk, after an Animal has brought forth Young.

PROTOPATHEIA. A primary, or idiopathic Affection.

PROTOPLASTUS. The firſt Man. *Paracelſus.*

PROTORRHYTOS. See CAPNELÆON.

PROTOS POROS, *πρῶτος πόρος*. The internal Mouth of the Uterus. *Ruffus Epheſius, de Appel. Corp. Human. Lib.* 1. *Cap.* 31.

PROTOSMA. The firſt Woman. *Paracelſus.*

PROTOSTACTON, *πρωτόσακτον*. A Lixivium from Aſhes, with an Addition of Quick-lime.

PROTOTOMI, *πρωτότομοι*. The tender Stalks, or Aſparagi, of Cabbages.

PROTROPON, *πρότροπον*. The ſame as PROCHYMA.

PROULIMATESIS, in *Foreſtus*, is a Diſorder of the Stomach, conſiſting in its Prominence, exciting an external Tumor. *Caſtellus.*

PROVOCATORII DIES are the ſame as the *Dies Intercalares*; that is, thoſe which fall betwixt the Critical Days, and the *Dies Indices*. They are the third, fifth, ninth, thirteenth, and nineteenth.

PRUINA, in *Paracelſus*, is a ſandy Sediment in the Urine. According to *Rulandus*, *Pruina* is the firſt Species of Tartar. *Pruinæ Chymicæ*, are Sublimates.

PRUNA. See PRUNUS.

PRUNELLA. Offic. Ger. 577. Emac. 632. Raii Hiſt. 1. 551. Synop. 3. 238. *Prunella vulgaris.* Park. Theat. 526. *Prunella flore minore vulgaris.* J. B. 3. 428. *Brunella major folio non diſſecto.* C. B. P. 260. Tourn. Inſt. 182. Boerh. Ind. A. 169. SELF-HEAL.

The Roots of Self-heal are ſlender, creeping, and fibrous; the lower Leaves grow on long Foot-ſtalks, beſet with a few Hairs, as is the reſt of the Plant; they are broadeſt in the Middle, and narrower at both Ends, leſs than Betony, and not at all indented about the Edges. The Stalks are ſquare, about a Foot high, with two Leaves ſet oppoſite at a Joint, which are not many on a Stalk; the nearer they grow to the Top, the

ſhorter

ſhorter are their Foot-ſtalks. The Flowers are ſet on the Top of the Branches in thick verticillated Spikes, of a purple Colour, having an hollow Galea, and a three-lipt Labella, ſtanding in brown flatiſh Calyces, ſix ſtanding round the Stalk in a Whorle; each Flower is ſucceeded by four longiſh brown Seeds growing in the Bottom of the Calyx. It grows everywhere in Meadows and Paſture-grounds, flowering all the latter Part of the Summer: The Leaves and Flowers are uſed.

Self-heal is reckoned among the vulnerary Plants, and is accounted ſerviceable for all Sorts of Wounds, and putrid Ulcers. It is reſtringent, and good for inward Bleedings, and making bloody Water; and is much uſed in Gargles, for Ulcers in the Mouth, Throat, or Gums, either the Juice, or a ſtrong Decoction. *Miller's Bot. Off.*

Self-heal gives a pretty deep red Colour to the blue Paper; it is of an herby, ſtyptic, and glutinous Taſte, mixed with a very little Bitterneſs; from which we may conjecture, that the acid Part of the natural Salt of the Earth is in this Plant diſengaged from a good deal of the acrid Part; and that, being united with abundance of Earth and Sulphur, it produces there a Salt which reſembles Alum. This Mixture of Principles renders Self-heal vulnerary, aſtringent, and deterſive; and is an Ingredient in the Arquebuſade Water, and in vulnerary Potions. *J. Bauhine* eſteems a Lotion of it for Gunſhot Wounds. It is preſcribed in Ptiſans, Broths, and Apozems, for ſpitting of Blood, for bloody Urine, for the too great or too frequent Flux of the Menſes, for the Bloody-flux, and for all Sorts of Hæmorrhages. It is uſed by way of Injection in deep Wounds, and by way of Clyſter in the Bloody-flux. For Diſeaſes of the Throat, Gargariſms of it muſt be frequently uſed. They bathe the Gums of ſcorbutic Perſons with it, adding ſome Grains of Maſtich. The diſtilled Water of the whole Plant, and the Conſerve of its Flowers, may be uſed for the ſame Purpoſes. *Cæſalpinus* uſed the Leaves bruiſed, and applied in form of a Cataplaſm, to ſuppurate Boils, and to heal Wounds. He uſed the Juice for the Ulcers of the Mouth, and, in great Pains of the Head, he bathed the Temples with it, after having mixed it with Oil of Roſes and Vinegar. *J. Bauhine* added to it a little Roſe-water, and gave it to drink to thoſe who had been bitten by any venomous Creature. *Martyn's Tournefort.*

Prunella abſterges and conſolidates; its principal Uſe is in Wounds, eſpecially of the Lungs, and in Coagulations of Blood. It is, alſo, frequently employed outwardly in Wounds, and in the Quinſey, and other Affections of the Mouth and Fauces. *Buxb.* This Plant is, alſo, of excellent Virtue in all inflammatory Diſtempers, Hæmorrhages, and Dyſenteries, and in ſpitting or piſſing of Blood. *Hiſt. Plant. adſcript. Boerhaave.*

PRUNELLUS. See PRUNUS.

PRUNUS.

The Characters are;

The Calyx is monophyllous and quinquefid; the Flower roſaceous, pentapetalous, and furniſhed with thirty or more Stamina. The Ovary in the Bottom of the Calyx becomes an ovated or globous Fruit, containing under a thin, ſmooth Membrane, or Skin, a ſoft Pulp, in the Middle of which is incloſed an oblong or oval flatiſh Stone, acuminated at both Ends, and containing a ſingle Kernel; the Pedicle of the Fruit is of a good Length.

Boerhaave mentions ſeven Species of *Prunus*; which are,

1. Prunus; ſylveſtris. *Ger.* 1313. *Emac.* 1497. *Park. Theat.* 1033. *C. B. P.* 444. *J. B.* 1. 193. *Raii Hiſt.* 2. 1527. *Synop.* 3. 462. *Boerh. Ind. A.* 2. 241. *Prunellus ſylveſtris.* Offic. *Acacia Germanica.* Schrod. THE SLOE-TREE, or BLACK THORN.

This is a Buſh, or ſmall Tree, whoſe tough Branches are full of hard ſharp Thorns, ſending forth its white five-leaved Flowers early in the Spring, before the Leaves appear, which are ſmall and oblong, finely indented about the Edges. The Flowers are ſucceeded by ſmall round Fruit growing on ſhort Stalks, green at firſt, but, when ripe, of a fine purpliſh-black Colour, of a rough, ſour, auſtere Taſte, and not fit to be eaten till mellowed by the Froſts. The Sloe-buſh grows every-where in the Hedges.

The Fruit is principally uſed, being reſtringent and binding, and good for all Kinds of Fluxes and Hæmorrhages. It is, likewiſe, of Service for Gargariſms for ſore Mouths and Gums, and to faſten looſe Teeth.

The Juice of Sloes, being boiled to a Conſiſtence, is the *Acacia Germanica*, Off. which is now uſed inſtead of the true, and put into all the great Compoſitions. It is of a darkiſh Colour on the Outſide, and rediſh within. *Miller's Bot. Off.*

The Leaves of the Sloe-tree are bitter, a little ſtyptic, glutinous, and give a faint Tincture of Red to the blue Paper; but the Fruits give it as deep a Red as Alum; they are a little ſour, and extremely ſtyptic: Thus it is likely, that the natural Salt of the Earth predominates in the Leaves, where it is mix'd with a little fetid Oil; but that its acid Part, being diſengaged in the Fruits, is united with the Earth, and forms a Salt reſembling Alum. *Tragus* found by ſeveral Experiments, that the diſtilled Water of the Sloe-tree is an excellent Remedy for the Pleuriſy, and for the Oppreſſions of the Stomach: When this Author had not the diſtilled Water of theſe Flowers, he gave Wine, in which they had been macerated, to be drank by his Patients, or elſe made uſe of the ſame Wine diſtilled in Balneo Mariæ. He affirms, that thoſe Fruits, preſerved with Honey, are very good for the Dyſentery, and all Sorts of Looſeneſſes. The Wine made of Sloes has the ſame Effect. *J. Bauhine* ſays, that in *Alſatia* they dry the Sloes in an Oven, and put them into their Muſt; and that renders them agreeable and aſtringent. *Matthiolus* made uſe of the Decoction of the Fruits and Roots for Ulcers of the Mouth and Throat. The Juice of the Fruits aſſwages the Inflammation of the Eyes; the ſame Juice, thickened, is called *Acacia Recentiorum*, or *Germanorum*, becauſe it is ſubſtituted in the room of the Acacia of the Antients, to cool and bind. *Wittichius* preſcribes as a good Purgative, the Syrup made with ſeveral Infuſions of the Flowers of this Tree. *Schroder* mentions it alſo. *Ettmuller* relates, that a very ſtrong Vinegar is obtained from the Juice of the green Fruits by diſtilling them in Balneo Mariæ. *Martyn's Tournefort.*

2. Prunus; fructu cerei coloris. *T.* 622.

3. Prunus; fructu majore; rotundo; rubro. *T.* 622.

4. Prunus; fructu maximo; rotundo; flavo & dulci. *T.* 622.

5. Prunus; fructu parvo, ex viridi flaveſcente. *T.* 623.

6. Prunus; fructu parvo præcoci. *T.* 623.

7. Prunus; fructu magno, dulci, atro-cœruleo. *Tourn. Inſt.* 622. *Boerh. Ind. A.* 2. 241. *Prunus Damaſcena.* Offic. *Pruna, magna, dulcia, atro-cœrulea.* C. B. P. 443. *Pruna atro-cœrulea, Theocrito Bartyla, aliis Damaſcena dicuntur.* Jonſ. Dendr. 77. THE DAMASK-PRUNE.

The beſt Plums, or Prunes, being formerly brought from *Damaſcus*, the Fruit has kept that Name ever ſince; though it is ſeldom or never brought from thence now, we making uſe of the Fruit that is brought from *France*, or the *Pruna Gallica*, Offic. which I take to be the Fruit of the *Prunus Damaſcena*, or Damſon Plum, *Ger.* the great Damſon or Damaſk-Plum of *Park. Parad.* They are brought over dried in great Quantities from *France*, being a larger and ſweeter Plum than the common Damſon.

Prunes are cooling and moiſtening, rendering the Body looſe and ſoluble; they aſſwage Thirſt, and mitigate the Heat and Acrimony of the Bile. A good Quantity of the Pulp is put into the lenitive Electuary.

Medicines deriving their Name from Prunes, are the *Electuarium Diaprunum, Lenitivum, & Solutivum.* See DIAPRUNUM. *Miller's Bot. Off.*

Beſides the foregoing Species of *Prunus*, *Dale* mentions the two following;

1. PRUNUS GALLICA. Offic. *Prunus.* C. B. P. 443. *Prunus ſativa.* J. B. 1. *Prunus domeſtica.* Ger. 1311. Emac. 1497. *Prunus vulgaris.* Park. Theat. 1511. *Prunus fructu parvo, dulci, atro-cœruleo.* Tourn. Inſt 622. THE COMMON PRUNE.

This Plant is frequently cultivated in Gardens, and flowers in *April.* It is tranſported dry to us from *Provence* and *Languedoc*, and its Gum is hard and pellucid. It is thought to be poſſeſſed of the ſame Virtues with the former. *Dale.*

2. PRUNUS BRIGNOLENSIS. Offic. *Prunus Brignonienſis fructu ſuaviſſimo.* Tourn. Inſt. 632. *Prunus Briolenſia aut Brignolenſia.* Raii Hiſt. 2. 1526. *Pruna ex flavo ruſeſcentia, mixti ſaporis, gratiſſima.* C. B. P. 443. THE PRUNELLO.

Theſe are ſmall yellow Plums, brought over from *France* in little long Boxes; they are moiſt, flat, and without Stones.

They are ſeldom preſcribed by Phyſicians; but being of a pleaſant grateful Taſte, and not ſubject to purge, they are frequently eaten by Perſons in Fevers. *Miller's Bot. Off.*

PRURIGO. The Itch. See LEPRA. Or an Itching.

PRURITUS. The ſame as PRURIGO.

PSAISTE MAZA, ψαιστὴ μάζα, is expounded in *Galen's* Exegeſis, by "a *Maza* worked up with Honey and Oil, becauſe, ſays he, the *Pſaiſta* were ſo prepared." Now the *Pſaiſta*, according to *Heſychius*, were *Alphita* wet with Oil, or, as *Suidas* ſays, with Oil and Wine, which they burnt in Sacrifice to the Gods. *Pſaiſta* was, alſo, a Name for a ſort of wide and round Cakes, by ſome called, alſo, ψεστὰ (*pſeſta*); agreeably to which, all the Copies read μάζαν ψεστὴν, *Lib.* περὶ τῶν ἐνδὸς παθῶν, tho' *Calvus* ſeems to have read ψαιστὴν, which occurs in another Place of the ſame Book, where we find μάζαν δὲ ψαιστὴν ὡς μάλιστα, "a Maza very well work'd "up with Oil and Honey;" but *Aldus* reads it here, too, ψεστὴν, as he does, alſo, in another Place of the ſame Book.

PSAGDAS, ψάγδας, is expounded in *Galen's Exegeſis* by τύδός τι μύρου, "a kind of Ointment," which is, alſo, the Expoſition which *Erotian* gives of it, and for which he quotes *Eupolis.* But ſome Copies of *Erotian* read ψάδδας; and *Heſychius* expounds ψάδδας, ψαγδὶς, by μύρον ποιὸν, "ſome "ſort

"ſort of Ointment." Upon the Whole, it ſeems to be a foreign and barbarous Term. *Foeſius.*

PSALACANTHA. ψαλακάνθα. *Suidas* informs us, that *Ptolemæus Cytherius* wrote a Poem on the *Pſalacantha*, which he ſaid was an Herb poſſeſs'd of many extraordinary Virtues. *Photius*, from *Ptolemæus Hephæſtionis*, mentions it as an *Egyptian* Plant, with ſome fabulous Circumſtances, not worth relating. Some, he ſays, repreſent it to be like the *Artemiſia*; others like *Melilot*.

PSAMMISMOS, ψαμμισμός. A ſort of Cure of the Dropſy, by covering the Body with Sand.

PSAPHEROS, ψαφερός, is expounded in *Galen*'s Exegeſis by ψαθυρός, (*pſathyrus*) and ψαφερόν, ψαφαρόν, are the ſame as ψαθυρόν, ψαδυρόν, ψαδαρόν, ψαδηρόν· and all ſignify brittle, or friable, and are applied to ſuch Foods as contain nothing of a fat or viſcous Subſtance, but are tender, friable, or incoherent. *Galen*, *Lib.* 3. *de Alim.* The ſame Author, *Lib.* 3. *de Diff. Pulſ.* oppoſes their Signification to γλισχρός, (*gliſchros*) viſcid, or glutinous; and, *Lib.* 11. *de M. M.* expreſſes it by κραυρός (*crauros*); as *Ariſtotle*, *Lib.* 4. *Meteor.* does by θραυςός, (*thrauſtos*), Words importing Friability, and Looſeneſs of Contexture: ψαφερόν, in *Coac.* 608. is joined with μαλθακόν, and both are apply'd to Excrements of a looſe and ſoft Contexture, which are condemn'd; ψαθαρὸν διαχώρημα is the ſame as ψαφαρόν, and ſignifies looſe, incoherent Excretions by Stool; and, in an Epithet, joined with ξηρόν, dry, ψαφαρόν is expounded alſo by ξηρον, ἀυχμηρόν, ἀσθενές, ἐλαφρόν, dry, ſqualid, weak, light. In *Coac.* 583. we read ὖρον, ὑδατώδες, ἢ τεθαραγμένον ψαφερῇ, τριχύτητι. "Urine like Wa"ter, or diſturbed with a looſe, or rough, and ſand-like Subſtance."

PSARON. The Name of a Powder deſcribed by *Aetius. Tetrabib.* 4. *Serm.* 2. *C.* 36.

PSATHYROS ψαθυρός. The ſame as PSAPHEROS.

PSEGMA. ψῆγμα. A Name for the *Flos Æris. Dioſcorides*,

PSELAPHIÆ, ψηλαφίαι, (from ψηλαφάω, properly, to touch the Strings, in playing on a muſical Inſtrument, as *Euſtathius in Iliad.* obſerves; but commonly ſignifying to feel or grope like Perſons in a Delirium) in *Hippocrates*, *Lib.* περὶ εὐσχημ· ſignifies Friction with the Hands, and is reckoned Part of the Office of a Phyſician, which he ſhould always be in a Readineſs to perform, when the Subject requir'd it.

PSEUDES, ψευδής, Falſe, or Baſtard. Hence the following Articles, beginning with *Pſeudo*, are derived.

PSEUDO-ACACIA.

The Characters are,

It has a papilionaceus Flower, from whoſe Calyx riſes the Ovary, involved in a fimbriated Membrane, and becoming, at laſt, a flat Pod, opening into two Parts, full of Kidney-ſhap'd Seeds.

Boerhaave mentions two Species of *Pſeudo-Acacia*; which are,

1. Pſeudo-Acacia, vulgaris. *Tourn. Inſt.* 649. *Boerh. Ind. A.* 2. 39. *Pſeudo-Acacia.* Offic. *Pſeudo-Acacia Americana Robini.* Park. Theat. 1550. *Acacia Americana Foliis coluteæ, monococcos, ſiliquis echinatis.* Raii Hiſt. 2. 1719. BASTARD ACACIA.

This Plant is naturally produced in *America*; but is with us found in the Gardens of the Curious. I know nothing of its Uſe and Virtues; at *Paris*, however, a diſtilled Water is prepared from its Flowers. *Dale.*

According to *Robinus*, the Leaves of this Plant when boiled and expreſſed, purge in the ſame manner with Sena. Others recommend a Decoction of the Leaves, for its corroberating and refrigerating Quality. It is exhibited in Dyſenteries, but excites violent Pains and Flatulences. *Hiſt. Plant. adſcript. Boorh.*

2. Pſeudo-Acacia; ſiliquis glabris; *Acacia Virginiana, ſiliquis glabris.* Raii Hiſt. 1719. *Boerh. Ind. alt. Plant. Vol.* 2.

PSEUDO-ACORUS. See ACORUS ADULTERINUS.

PSEUDO APOCYNUM, *hederaceum, Americanum, tubuloſo Flore phœniceo, Fraxini Folio.* A Name, in *Boerhaave*, for the *Bignonia, Americana, Fraxini Folio*; *Flore amplo, phœniceo.*

Pſeudo-Apocynum, Americanum, capreolatum, tetraphyllum, tubuloſo Flore, Foliis longioribus. A Name, alſo, in *Boerhaave*, for the *Bignonia, Americana, capreolis donata, ſiliquâ breviori.*

PSEUDO-ASPHODELUS. *Ray*, in *Hiſt. Plant.* takes notice of three Plants under this Name. The firſt is the;

Pſeudo-Aſphodelus minor, ſive Pumilio, Folio Iridis, ſive 2 Cluſ.

Pſeudo-Aſphodelus Alpinus, C. B. *Minor, Folio Iridis.* THE LESSER BASTARD ASPHODEL. Park. *Aſphodelus Lancaſtriæ*, Lancaſhire Aſphodil.

I find no medicinal Virtues aſcribed to this Plant.

The ſecond is the,

Pſeudo-Aſphodelus paluſtris vulgaris noſtras. Aſphodelus Lancaſtriæ verus. Ger. Emac. deſcr. TRUE LANCASHIRE ASPHODEL. *Pſeudo-Aſphodelus primus.* Cluſ. *Paluſtris Anglicus.* C. B. *Luteus, acrifolius, paluſtris Anglicus.* Lobelii I. B.

This is ſaid to be an excellent Application for the Cure of Wounds. Women dye their Hair with the Flowers of this Plant, macerated in a *Lixivium.*

The third is the

Pſeudo-Aſphodelus paluſtris, Scoticus minimus. THE LEAST SCOTISH ASPHODEL.

No medicinal Virtues are aſcribed to this Species.

PSEUDO-ASTHMA. An *Aſthma* excited by an Abſceſs, or Vomica, in the Lungs.

PSEUDO-BUNIAS. See BARBAREA.

PSEUDO-BUNIUM. See BUNIAS.

PSEUDO-CADMIA. A Name for the ANTICADMIA.

PSEUDO-CAPSICUM A Name for the *Solanum, fruticoſum, bacciferum.*

PSEUDO-CHAMÆBUXUS. A Name for the *Polygala, frutescens, Folio buxi, Flore maximo.*

PSEUDO-CHINA. A Name for the *Senecio, Aſiaticus, Jacobææ Folio, radice lignoſâ, China officinarum dicta nobis.*

PSEUDO-COLOCYNTHIS. A Name for the *Pepo, fructu ovato, variegato.*

PSEUDO-CORALLIUM. A Name for the CORALLIUM NIGRUM.

PSEUDO-COSTUS. A Name for the *Paſtinaca, Oluſatri folio.*

PSEUDO-CYTISUS. See CYTISUS.

PSEUDO-DICTAMNUS.

The Characters are;

The Root is perennial; the Calyx is orbicular, open, and contains the ripe Seeds, under Covert, as it were, in a Sawcer. The Galea is erect, fornicated, or arched, and bifid; and the Beard tripartite. The Whorles of the Flowers, reſemble thoſe of white Horehound; and are diſpoſed in cloſe Order, with aculeated Apices.

Boerhaave mentions eight Species of *Pſeudo-dictamnus*; which are,

1. Pſeudo-dictamnus, acetabulis moluccæ. *C. B. P.* 222. *M. H.* 3. 378.

2. Pſeudo-dictamnus, verticillatus, inodorus. *C. B. P.* 222. *Tourn. Inſt.* 188. *Boerh. Ind. A.* 173. *Pſeudo-dictamnus.* Offic. Park. Theat. 27. *Pſeudo-dictamnum.* Ger. 651. Emac. 797. *Dictamnum adulterinum, quibuſdam verticillatum, vel potius Gnaphalium veterum.* J. B. 3. 255. *Marrubium Pſeudo-dictamnum dictum.* Raii Hiſt. 1. 557. *Gnaphalium veterum, Centunculus, Dictamnum adulterinum quibuſdam.* Chab. 410. BASTARD DITTANY.

This Plant is cultivated in Gardens, and flowers in *July.* The Herb is only uſed, and as in external Appearance, ſo in Virtues, it agrees with Horehound. *Dale.*

The Virtues of this Plant are by ſome ſaid to be the ſame with thoſe of the Dittany; but this is by no means true, ſince the odorous Smell of the former is not ſo ſtrong as that of the latter. It is by ſome thought to be the *Alypion* of the Antients, but unjuſtly. *Hiſt. Plant. adſcript. Boerhaav.*

3. Pſeudo-dictamnus, Hiſpanicus, ampliſſimo Folio nigricante, & villoſo. *T.* 188.

4. Pſeudo-dictamnus; Hiſpanicus, Folio Scrophulariæ. *T.* 188. *Galeopſis Anguillaræ.* 278.

5. Pſeudo-dictamnus, Hiſpanicus, ampliſſimo Folio candicante & villoſo. *T.* 188. *Marrubium ſubrotundo Folio.* Boc. Muſ. 2. 167. Tab. 122.

6. Pſeudo-dictamnus, Africanus, foliis ſubrotundis, ſubtus incanis. *H. A.* 2. 179. *Marrubium rotundifolium, Africanum, Folio Hederæ terreſtris.* Flor. 2. 67.

7. Pſeudo-dictamnus, Hiſpanicus, Foliis criſpis & rugoſis. *T.* 188. *Marrubium, Dictamni ſpurii Foliis & Facie.* Par. Bat.

8. Pſeudo-dictamnus, Hiſpanicus, Folio ampliſſimo, candicante & villoſo. *T.* 188. *Boerh. Ind. alt. Plant. Vol.* 1.

PSEUDO-DIGITALIS. A Name for the *Dracocephalon*; *Americanum.*

PSEUDO-FUMARIA. A Name in *Boerhaave* for the CAPNOIDES.

PSEUDO-GNAPHALIUM. A Name for the *Gnaphalodes, Luſitanica.*

PSEUDO-HELICHRYSUM. A Name for the *Helichryſum, ſylveſtre, latifolium, capitulis conglobatis.*

PSEUDO-HELICHRYSUM FRUTESCENS. A Name for the *Senecio, Africanus, Folio retuſo.*

PSEUDO-HELICHRYSUM VIRGINIANUM. A Name for the *Senecio, Virginianus, arboreſcens, atriplicis Folio.*

PSEUDO-HELLEBORUS. A Name for the *Helleboro-Ranunculus, Flore luteo globoſo.*

Pſeudo-Helleborus Ranunculoides. A Name for the *Populago, Flore majore*; and for the *Populago, flore pleno.*

PSEUDO-IPECACUANHA. See APOCYNUM.

PSEUDO-IRIS. See ACORUS ADULTERINUS.

PSEUDO-LIEN. A Name for certain Glands obſerved by *Ruyſch* adjacent to the Spleen.

PSEUDO-LOTUS. A Name for the GUAJACANA.

PSEUDO-LYSIMACHIUM. A Name for the *Salicaria, vulgaris purpurea, foliis oblongis*; and for the *Veronica, ſpicata, longifolia.*

PSEUDO-MARRUBIUM. A Name for the *Lycopus, paluſtris, glaber*; and for the *Lycopus, Foliis in profundas lacinias diſſectis.*

PSEUDO-MELANTHIUM. A Name for the *Lychnis, ſegetum major.*

PSEUDO-MELISSA. A Name for the *Meliſſa, humilis, latifolia, maximo flore, purpuraſcente.*

PSEUDO-MOLA. A falſe Mole, form'd by a Piece of the *Placenta*, left in the Uterus after the Excluſion of the *Fœtus.*

PSEUDO-NARCISSUS. A Name in *Boerhaave* for ſeveral Sorts of *Narciſſus.*

PSEUDO-NARDUS. A Name for the *Lavandula*; *latifolia*; and for the *Lavandula*; *anguſtifolia*; *Flore albo.*

PSEUDO-ORCHIS. A Name in *Boerhaave* for the *Orchis*; *lilifolia*; *minor*; *ſabuletorum Zelandiæ & Bataviæ.*

PSEUDO-PETASITES. A Name for the *Petaſites*; *Africanus*; *Calthæ paluſtris Folio.*

PSEUDO-POLYPUS. A Baſtard Polypus.

PSEUDO-RHABARBARUM. A Name for the *Thalictrum*; *majus*; *ſiliquâ anguloſâ, aut ſtriata*; and for the *Thalictrum*; *majus*; *flavum*; *ſtaminibus luteis*; *vel glauco Folio.*

PSEUDO-RUBIA. A Name for the *Rubeola*; *latiore Folio*; and for the *Rubeola*; *anguſtiore Folio.*

PSEUDO-SALVIA. A Name for the *Phlomis*; *fruticoſa*; *ſalviæ Folio latiore & rotundiore*; for the *Phlomis*; *fruticoſa*; *ſalviæ Folio longiore & anguſtiore*; and for the *Phlomis*; *fruticoſa*; *Folio ſubrotundo, breviore*; *Flore luteo.*

PSEUDO-SELINUM. A Name for the *Caucalis*; *Semine aſpero*; *Floſculis rubentibus.*

PSEUDO-STACHYS. A Name for the *Stachys*; *Cretica*; *pro Pſeudo-ſtachyde* I. *in prodromo deſcribitur*; for the *Stachys*; *Alpina*; *magna*; *Flore ex albo rubeſcente*; and for the *Galeopſis*; *Alpina*; *Betonicæ Folio*; *Flore variegato.*

PSEUDO-STRUTHIUM. A Name for the *luteola Herba*; *ſalicis Folio.*

PSEUDO-SYCOMORUS. See AZEDARACH.

PSEUDO-VALERIANA. A Name for ſeveral Sorts of VALERIANELLA.

PSIDA. The external Rind of the Pomegranate.

PSILOTHRON, ψίλωθρον. A Depilatory.

PSIMMYTHION, ψιμμύθιον. Ceruſs.

PSINKUS. Ceruſs. *Rulandus.*

PSITTACION, ψιττάκιον. The Name of a diſcutient Plaiſter, deſcribed by *Paulus Ægineta*, *L.* 7. *C.* 17. *Scribonius Largus* deſcribes a *Collyrium* by the Name of *Collyrium Pſittacinum.* N°. 27.

PSITTACUS. The Parrot.

PSOÆ, ψόαι. The Name of two Pair of Muſcles of the Loins.

The firſt is the

PSOAS, *ſive*, LUMBARIS INTERNUS.

This is a long thick Muſcle, ſituated in the Abdomen, on the lumbar Region, adhering to the Vertebræ of the Loins, from the poſterior Part of the Os Ilium, to the anterior Part near the Thigh.

It is fixed above to the laſt Vertebra of the Back, and to all thoſe of the Loins, that is, to the lateral Parts of the Bodies of theſe Vertebræ, and to the Roots of their tranverſe Apophyſes. The Inſertions in the Bodies of the Vertebræ, are by a kind of Digitations, and are very little tendinous.

From thence, the Muſcle runs down laterally over the Os Ilium, on one Side of the Iliac Muſcle, and paſſes under the *Ligamentum Fallopii*, between the anterior, inferior Spine of the Os Ilium, and that Eminence, which, from its Situation, may be termed *Ilio-Pectinea.*

Before it goes out of the Abdomen, it unites with the *Iliacus*, and is ſometimes fixed by a few fleſhy Fibres, in the Outſide of the Eminence laſt mentioned. It afterwards covers the fore Side of the Head of the Os Femoris, and is inſerted in the fore Part of the little Trochanter, by an oblique Tendon, which is folded double from behind forward.

This Muſcle is ſometimes accompanied by another ſmaller Muſcle almoſt like it, called *Pſoas parvus*, of which hereafter.

The *Pſoas* bends the Thigh on the Pelvis, or brings it forward; it may, alſo, move the Pelvis on the Thighs, and hinder it from being carried along with the reſt of the Trunk, when the Body is inclined backward, while we ſit, having the lower Extremities fixed by ſome external Force. In this Situation it may, alſo, move the Vertebræ of the Loins. *Winſlow's Anatomy.*

The ſecond is the

PSOAS PARVUS.

This is a long ſlender Muſcle, lying upon the *Pſoas major*: It is ſometimes wanting; and *Riolanus*, who met with it often in Men, takes notice of his having found it once in a Woman, as a Thing very extraordinary. As for my Part, I found it ſeveral times in Women, before I ever met with it in Men; and I ſtill continue to obſerve it moſt frequently in that Sex.

It is fixed above by a ſhort Tendon, ſometimes to the laſt tranſverſe Apophyſis of the Back, or higher; ſometimes to the firſt of the Loins, and ſometimes to both: From thence it runs down wholly fleſhy, and more or leſs complex, on the great *Pſoas*, in a Direction a little oblique.

Having reached the middle of the *Regio lumbaris* or thereabouts, it forms a ſlender flat Tendon, which, gradually increaſing in Breadth, like a thin Aponeuroſis runs over the *Pſoas major*, and *Iliacus internus*, at their Union, and from thence down to the Symphyſis of the *Os Pubis*, and *Os Ilium*; and is inſerted principally in the Criſta of the *Os Pubis*, above the Inſertion of the *Pectineus*, ſometimes ſending an Aponeurotic Lamina farther down.

Beſides the *Pſoas parvus*, there is another ſtill ſmaller, between it and the *Vertebræ*, inſerted much in the ſame manner. This Muſcle I diſcovered in the Year 1713.

The *Pſoas parvus*, when it is found, ſerves to ſuſtain the *Pelvis*, much in the ſame manner with the *Muſculi Recti* of the Abdomen; in climbing. But when we ſtand, we have no need of ſuch a Support, the *Pelvis* reſting then upon the *Oſſa Femoris*, in ſuch a manner, as that the largeſt Portion thereof, and that which ſupports the whole Body, lies behind that *Fulcrum*, and the ſmalleſt Part before. It may, alſo, ſerve to hinder the vertebral Pillar from bending backward on ſome Occaſions. *Winſlow's Anatomy.*

PSOMISMA, ψώμισμα. Meat which is put into the Mouth of a Child.

PSOPHOS, ψόφος. A Noiſe, a Sound. Ψόφοι ἐν τῷ στήθει, are Noiſes, or Sounds, proceeding from the Breaſt, occaſioned by flatulent Matter attempted to be expectorated. Ψοφώδεις (*pſophodeis*) are thoſe who ſtart and tremble at every Noiſe; ſuch are they who labour under a Phrenſy or Delirium, 1 *Prorrhet.* 16. *Coac.* 96. where the ψοφώδεις are expreſſed by ψόφοι καθαπλόμενοι. which *Galen* in his *Exegeſis* expounds by ψόφοι ῥᾳδίως αἰσθανόμενοι· "Such as are very quick in their Perception of a Noiſe or "Sound."

PSORA, ψώρα. A Species of Itch. See LEPRA.

PSORIASIS. A Species of Itch affecting the *Scrotum*. *Blancard.*

PSORICA. Medicines for the Itch.

PSOROPHTHALMIA. A *Pſora*, or ſcurfy Diſorder of the Eye-lids.

PSUCHAGOGICA; from ψυχή, Life. Medicines which recal Life in an Apoplexy, or Syncope.

PSYCHOTROPHON. A Name for Betony. *Dioſcorides*, *L.* 4. *C.* 1.

PSYCHROLUSIA, ψυχρολυσία, or PSUCHROLUTRON, ψυχρόλουτρον, from ψυχρός, cold, and λέω, to waſh. Cold-bathing, or a Cold-bath. Sir *John Floyer* has given this as a Title to a Book wrote upon the Subject of Cold-bathing.

PSYCTICA. Refrigerating Remedies.

PSYDRACIA. A Species of Puſtule, of which *Trallian*, *L.* 1. *C.* 5. gives the following Definition. Theſe are ſmall Tubercles of the Head, which reſemble Puſtules, and corrode the Skin: But Exanthemata are ſuperficial Exulcerations of the Skin, of a reddiſh Colour, and rough to the Touch. Both theſe Diſorders, eſpecially when of the moiſt Kind, are cured by an Ointment thus prepared:

> Take of Litharge and Ceruſs, each four Ounces; of Alum, and the green Leaves of Rue, each two Ounces; and of Vinegar, and the Oil of Myrtle, a ſufficient Quantity to make an Ointment.

PSYGMATA, ψύγματα. Refrigerating Medicines, either internal, or external.

PSYLLI. A People of *Africa*, celebrated by the Antients, for curing the Wounds of venomous Bites by ſucking them; but *Celſus*, *L.* 9. *C.* 27. is of Opinion, that any one may do the ſame thing without any Injury to themſelves.

PSYLLIUM.

The Characters are;

It agrees, in all reſpects, with the *Plantago*, and *Coronopus*; only the Stalks are leafy and ramous, or divided into a Multitude of Branches.

Boerhaave mentions four Species of this Plant; which are,

1. Pſyllium; majus; erectum; latifolium; annuum. *Boerh. Ind. A.* 2. 101. *Pſyllium.* Offic. *Pſyllium vulgare.* Park. Theat. 277. *Pſyllium majus erectum.* J. B. 3. 513. C. B. P. 191. Tourn. Inſt. 128. *Pſyllium ſive Pulicaris Herba.* Ger. 471. Emac. 587. *Plantago cauliſora Pſyllium dicta.* Raii Hiſt. 1. FLEAWORT.

Fleawort has round hairy Stalks, a Foot or more high, beſet at the Joints with two, and ſometimes three, long, narrow, ſharp-pointed, ſomewhat hairy Leaves, often lightly cut in about the Edges. From the Boſom of theſe, toward the upper Part of the Stalks, ariſe pretty long ſlender Foot-ſtalks, bearing at the Ends round ſhort Spikes of ſmall ſtaminous Flowers, of four Leaves apiece, with Apices ſtanding out, and ſomewhat reſembling the Heads of the long Plantain; and are ſucceeded by round Seed-veſſels; containing two round ſhining reddiſh-brown Seeds, that look like Fleas, whence it takes its Name. The Root is ſtringy and fibrous; it grows in the *Southern* Parts of *France*, from whence we have the Seed which only is uſed.

Some attribute a purgative Quality to this Seed, but we uſe it only to extract a Mucilage for ſore Mouths and Throats, and to help Thruſhes and Quinſeys. It is, likewiſe, uſeful to obtund ſharp acrimonious Humours, which corrode the Bowels, and cauſe Dyſenteries. Outwardly it is good for ſore, inflamed, Blood-ſhot Eyes. *Miller's Bot. Off.*

The Salt of this Plant reſembles that of Coral; but is mixed with a little Sal Ammoniac, a great deal of Sulphur, and terreſtrial Parts.

By the chymical Analyſis, it yields a great deal of Oil and Earth, no volatile concrete Salt, a little urinous Spirit, and ſeveral acid Liquors.

Pſyllium-ſeed is uſed in the *Electuary de Pſyllio*; but its purgative Virtue ought to be attributed to the Scammony, and the other Cathartics. The Mucilage of Pſyllium is very lenifying, and good to aſſwage the Inflammation of the Eyes: It is given in a Clyſter, for the Dyſentery, and Inflammation of the Kidneys. *Martyn's Tournefort.*

2. Pſyllium; majus; ſupinum; anguſtifolium & perenne.

3. Pſyllium; maximum; ex Littore Veneto.

4. Pſyllium Indicum; foliis crenatis. *J. B.* 3. 514. *Boerh. Ind. alt. Plant. Vol.* 2.

PSYTHIOS. An Epithet of Wine, importing Sweetneſs.

PTARMICA.

The Characters are;

The Leaves are ſerrated, crenated, diſſected, and void of Smell; the Calyx is ſquamous; the Flowers are altogether white, and generally diſpoſed in Umbellas; the Seeds are very thin and ſlender.

Boerhaave mentions nine Species of Ptarmica; which are,

1. Ptarmica; vulgaris; folio longo, ſerrato; flore albo. *J. B.* 3. 147. *Boerh. Ind. alt.* 111. *Tourn. Inſt.* 496. *Ptarmica.* Offic. Ger. 483. Emac. 606. Raii Hiſt. 1. 344. Synop. 91. *Ptarmica vulgaris.* Park. 858. *Dracunculus ſerrato folio pratenſis.* C. B. P. 98. *Achillea foliis integris minutiſſime ſerratis.* Act. Reg. Par. Ann. 1720. 321. SNEEZWORT, BASTARD PELLITORY.

From a woody, creeping, fibrous Root, of an hot biting Taſte, this Plant ſends out upright Stalks a Foot or more high, ſtiff, and not much branched, having long narrow Leaves, finely ſerrated about the Edges, growing on them without any Order: The Flowers grow Umbel-faſhion, on the Tops of the Stalks, conſiſting of a Border of white Petala, ſet about a fiſtular Thrum; they are larger than the Flowers of Yarrow: It grows in moiſt Meadows, and in watery Places; and flowers in *July.*

It is of an hot biting Taſte; and, therefore, it is ſometimes put into Salads, to correct the Coldneſs of other Herbs: The Root, held in the Mouth, helps the Tooth-ach, by evacuating the Rheum, like Pellitory of *Spain:* The Powder of the Herb, ſnuffed up the Noſe, cauſes Sneezing, and cleanſes the Head of tough ſlimy Humours. *Miller's Bot. Off.*

2. Ptarmica; vulgaris; pleno flore. *Cluſ. H.* 12. *Dracunculus, pratenſis, flore pleno.* C. B. P. 98.

3. Ptarmica; foliis profundè ſerratis, lætè viridibus; elatior. *H. L.* 694. *Flor.* 2. 51. *Dracunculus Alpinus, latiore folio ſerratus.* Sch. B. P.

4. Ptarmica; foliis profunde ſerratis; minor & humilior. *Flor.* 2. 51.

5. Ptarmica; vulgaris; folio longo; ſerrato & humilior. *Flor.* 2. 51.

6. Ptarmica; Alpina; incanis, ſerratis, foliis. *H. L.* 694.

7. Ptarmica; incana; humilis; foliis laciniatis, Abſinthii æmulis. *H. L.* 510. *Abſinthium Alpinum, umbelliferum, latifolium.* C. B. P. 139.

8. Ptarmica; Alpina, Tanaceti foliis, flore purpureo. *T.* 497. *Millefolium montanum, purpureum, Tanaceti foliis.* M. H. 3. 39.

9. Ptarmica; Orientalis; foliis Santolinæ incanis; flore pallido. *Vaill. Boerh. Ind. alt. Plant. Vol.* 1.

The firſt and ſecond Species of this Plant are of an heating and penetrating Quality. The Antients exhibited it in all Diſorders, where it was neceſſary to ſtimulate and open; for which Purpoſes it is very proper. By its Heat it corroborates the Stomach: Its Leaves, if chewed, procure a copious Diſcharge of Saliva; for which Reaſon they are beneficial in Toothachs: They are, alſo, exhibited in mucous and viſcid Obſtructions of the Fauces, where Sweats are to be excited. The Juice of this Plant, when boiled, is proper in all thoſe Diſorders for which Feverfew is recommended; but does not contain ſo large a Quantity of Oil, and, conſequently, is not ſo adheſive. *Hiſt. Plant. adſcript. Boerhaav.*

PTERIS, πτέρις. Fern.

PTERNA, πτέρνη. The Calcaneum.

PTERYGION, πτερύγιον. A Film of the Eye. See Oculus.

But *Pterygion*, in *Celſus, Lib.* 6. *Cap.* 19. is a Diſorder of the Fingers: The Deſcription and Cure of which he gives in the following manner:

Old Ulcers of the Fingers are moſt commodiouſly cured by Lycium, or boiled Amurca, with an Addition of Wine to each. In the Nails there ſometimes ariſes a Species of Caruncle, accompanied with great Pain, and by the *Greeks* called πτερύγιον. In order to cure this Diſorder, we muſt diſſolve round Melian Alum in Water, till it is of the Conſiſtence of Honey. Then we muſt add a Quantity of Honey, equal to that of the Alum, and mix them with a Spatula, till the Preparation has aſſumed a Saffron-colour. With this the Parts affected are to be anointed. Some, for the ſame Purpoſe, rather chooſe a Decoction

of equal Quantities of dry Alum, and Honey, mixed together. If the Pterygia are not, by this means, removed, they are to be extirpated, and the Fingers are to be fomented with a Decoction of Vervain, and the following Medicine.

Take of Chalcitis, Pomegranate-peel, and the Squamæ Æris, each a proper Quantity: Mix them with a fat Fig; boil gently in Honey, and apply to the Part affected. Or,

Take of burnt Paper, Auripigmentum, and native Sulphur, each an equal Quantity: Mix with a Cerate, prepared of Oil of Myrtle, and apply to the Part. Or,

Take of the Powder of Verdegriſe, one Dram; and of the Squamæ Æris, two Drams: Mix with a ſufficient Quantity of Honey, and apply to the Part affected. Or.

Mix equal Parts of Lime-ſtone, Chalcitis, and Auripigmentum, and apply to the Part.

Theſe Medicines, when applied, are to be covered with a Linen Cloth, dipt in Water. On the third Day, the Dreſſing is to be removed; the dry Parts, if any, are to be cut off, and the like Dreſſing is again to be applied. If the Diſorder is not removed by theſe means, the Part affected is to be cleanſed with the Knife, cauterized with ſmall Irons, and cured like other Burns.

PTERYGODEES, πτερυγώδεες, in *Hippocrates*, are thoſe People whoſe Cheſts are narrow and flat, ſo that their Scapulæ are prominent, like Wings. Such Perſons have been always eſteemed ſubject to Conſumptions.

PTERYGOIDES PROCESSUS. The Pterygoide, or Wing-like Proceſſes of the Os Sphenoides. See Caput.

PTERYGOPALATINUS MUSCULUS. A Name of a Muſcle of the Uvula; which ſee.

PTERYGOPHARYNGÆUS MUSCULUS. A Muſcle of the Fauces. See Oesophagus.

PTERYGOSTAPHYLINI MUSCULI. Some Muſcles of the Uvula are thus called. See Uvula.

PTILOSIS, πτίλωσις, from πτίλος, a Perſon who has loſt his Eye-laſhes. A Baldneſs of the Eye-laſhes. *Paulus Ægineta, Lib.* 3. *Cap.* 22. ſays, the Ptiloſis and Madaroſis are Diſorders of the external Margins of the Eye-lids. The Madaroſis is only a Falling off of their Hairs, produced by a Defluxion of acrid Humours; whereas, in a Ptiloſis, the Margins of the Eye-lids become thick and callous; ſo that it is a Diſorder complicated of a Madaroſis, and an hard Lippitude: For which Reaſon the Remedies proper for the one are, alſo, conducive to the Removal of the other. For procuring the Growth of the Hairs, and preventing an Itching and Corroſion of the Corners of the Eyes, the beſt Medicine is that of *Philoxenes*, diſtinguiſhed by the Epithet *dry.* For removing a Dimneſs of Sight, the following Preparation is excellent:

Take of Cadmia, eight Drams; of Sal Ammoniac, two Drams; of Saffron, and Spikenard, each two Drams; and of white Pepper, one Dram: Mix all together for Uſe. Antimony, alſo, anſwers the ſame Purpoſe.

For a Corroſion of the Corners of the Eyes, and a Ptiloſis:

Take of calcined Antimony, extinguiſhed in Womens Milk, thirteen Drams; of Aloes, Myrrh, and Spikenard, each two Drams; and of calcined Barley, carefully triturated, four Drams: Mix, and uſe dry.

Another Medicine for a Ptiloſis, and Corroſion of the Eyelids, is thus prepared:

Take of the Marrow of an Ox's Right fore Leg, a ſufficient Quantity; triturate it duly with Soot, and uſe it.

The Soot intended for this Purpoſe is to be thus prepared: Immerſe a ſufficient Quantity of Paper in the Oleum Seſaminum: Put the Paper in a Lamp, kindle it, and hold above it a ſmooth Shell, or brazen Veſſel, in order to collect the Soot, which, when triturated with the above-mentioned Marrow, is to be uſed. The Rennet of a Calf is, alſo, excellent for the ſame Purpoſe. For a Milphoſis, an Increaſe of Fleſh in the Corners of the Eyes, and other inveterate Diſorders of them, *Soſander* directs the following Medicine:

Take of Cadmia, Antimony, crude Chalcitis, and crude Miſy, each eight Drams: Bruiſe theſe; mix them with Honey, and torrefy them, after extinguiſhing them in Wine, and triturating them: Add to them, of Spikenard,

two

two Drams; of torrefied Saffron, two Drams; and of Pepper, one Dram: All theſe, when triturated together, are to be uſed.

The more ſimple Medicines contributing to the Cure of a Ptiloſis, and a Corroſion of the Eye-lids, are boiled Amurca, *Indian* Lycium, and *Armenian* Stone, uſed by the Painters; which laſt, when mixed with Water, and uſed by way of Ointment, conſumes the peccant Humours, and augments the natural Hairs; the Ruſt of Iron, triturated for many Days in the Heat of the Sun, and reduced to the Form of a Collyrium, with Wine and Myrrh; and Spodium, mixed with the Juice of Onions.

PTISSANA, *ſive* PTISANA, πτισάνη ἢ πτισάνη, from πτίσσω, to decorticate, bruiſe, or pound. Ptiſſan, or Ptiſan, is properly Barley decorticated, or deprived of its Hulls; or, as *Suidas* expounds the Word, ἡ κεκομμένη κριθή, "pounded Bar-"ley;" becauſe the antient Way of clearing Barley from its Hulls was not by grinding, as it is now performed, but by pounding in a Mortar: For the Antients, in preparing their Ptiſſana, firſt ſprinkled their Barley with Water; then left it to ſwell; afterwards dried it in the Sun; and then pounded it in a Mortar, with a wooden Peſtle, till it was ſeparated from its Hulls; and then repoſited it. Some, after wetting their Barley, and drying it in the Sun; as before, pounded it in a Mortar till it was deprived of its Hulls; then ground it to a Meal; and, afterwards, boiled it for a very conſiderable Time, to deprive it, as they imagined, of its Flatulency; then they dried it, and reduced it into ſmall Lumps, or Balls, with which they made ſorbile Liquors on occaſion. Others, again, as we are informed by *Conſtant. Cæſar*, *Lib.* 12. *de Agricultura*, after macerating, cleanſing, decorticating, and drying their Barley in the Sun, pounded it over-again; and, after giving it a ſecond Drying in the Sun, before they repoſited it, ſprinkled it over with the thin Particles which they had beaten out in pounding it, becauſe they had found them to contribute towards its Preſervation.

Though Ptiſana was properly prepared only of Barley, yet it uſed to be made, alſo, of other Grain, as of Wheat, Alica, Spelt, Rice, and Lentils; but, then, it was not called ſimply *Ptiſſana*, but with an Addition, expreſſing the Grain of which it was prepared, as, when they called it πτισάνην πυρίνην, "Wheaten Ptiſſan;" χονδροπτισάνην, "Ptiſſan made of "Alica;" τὴν ἐκ ζειᾶς ἢ ὀρύζης πτισάνην, "Ptiſſan prepared "of Spelt, or Rice;" and ſo of the reſt. Ptiſſan, thus prepared, was reſerved for Uſe, with a prudent Regard to Health, which deſerves Imitation; and, when Occaſion required, was ready at hand, to be boiled in Water. There were different Ways of boiling it; but the moſt common Method among the *Greeks* was that deſcribed by *Galen*, *Lib.* 1. *de Alimentis*, and is as follows: They boiled a Portion of Ptiſan in ten, or, as *Paulus* ſays, in fifteen times the Quantity of Water, taking care to make it ſwell as much as poſſible, during the Time of boiling; for what readily ſwells, and that to a conſiderable Degree, is eſteemed the beſt; as, on the contrary, what ſwells but little and ſlowly, is accounted the worſt. When it is ſwelled up to a conſiderable Degree, they pour in a little Vinegar upon it, and then a little Oil; but this laſt may be added at the Beginning: When it is perfectly boiled, they ſprinkle it with powdered Salt, without any other Addition, except, perhaps, of a ſmall Quantity of Dill, or Leeks. Thus *Galen*. And this is the beſt Way of preparing Ptiſſan; and far to be preferred to that where many ſuperfluous Ingredients are unſkilfully added, in order to ſeaſon it; for ſome added Amylum, others Sapa; and ſome put Honey and Cumin to it, making of it an Hotch-potch, rather than a Ptiſan; and, perhaps, they had ſome Reaſon for thus preparing it, which might be with a View to attenuate its Groſſneſs, correct its Viſcidity, or diſcuſs its Flatulences. We who far excel the Antients in Delicacy, and, in point of Cookery, outdo *Apicius* himſelf, (who, *Lib.* 4. *de Obſoniis*, ſpeaks of thoſe ſuperfluous Seaſonings) deſpiſe them all, and are contented with putting thereto ſome triturated Almonds and Sugar, with a moderate Quantity of Salt, which are indeed of ſome Efficacy againſt the Groſſneſs, Viſcidity, and Flatulency of the Barley; but far inferior, in that reſpect, to Leeks and Dill, which are not only grateful to the Palate, but not a little conducive to Health.

Ptiſſana, thus boiled, as aforeſaid, is no longer called *Ptiſſana*, but πτισάνης χυλὸς ἢ ῥόφημα, "the Cream or Soop of "Ptiſſan," or, what is the ſame Thing, *Ptiſſanæ Jus vel Succus*, "the Broth, Gruel, or Juice of Ptiſſan." *Celſus* uſually calls the Broth of entire Barley, boiled till it burſts, *Cremor Hordei*, "Cream of Barley;" and preſcribes it in bilious and burning Fevers.

Πτισάνη, "Ptiſſan uſed ſimply;" ὅλη πτισάνη, "entire "Ptiſſan;" and πτισάνη κριθώδης, "Barley Ptiſſan;" in *Hippocrates*, ſignify all three the ſame Thing, that is, Ptiſſan not ſtrained: For if, after boiling, you ſtrain it, and ſet aſide the Liquor, this Liquor is neither called *entire Ptiſſan*, nor *Barley Ptiſſan*; nor ſimply *Ptiſſan*, but only χυλὸς πτισάνης, "the Juice of Ptiſſan." Thus *Galen*, *Com. in Lib. de R. V. I. A.* In *Lib.* 2. *Epid.* near the Beginning, this entire or unſtrained Ptiſan is called πτισάνη παχεῖα, "thick Ptiſan." *Gorræus*. *Foeſius*.

See *Hippocrates*'s Treatiſe, *de Ratione Victus in Acutis*, under the Article ALCALI.

PTOLEMÆI CHIRURGI MEDICAMENTUM. The Name of a Medicine mentioned by *Celſus*, *Lib.* 6. *Cap.* 7.

PTOLEMÆI EMPLASTRUM. The Name of a Plaiſter mentioned by *Marcellus Empiricus*, *Cap.* 36.

PTOLEMÆI EUERGETÆ STOMATICA. The Name of a Medicine calculated for the Mouth, and deſcribed by *Marcellus Empiricus*, *Cap.* 14.

PTOLEMÆI REGIS COLLYRIUM. The Name of a Collyrium, mentioned by *Aetius*, *Tetr.* 2. *Serm.* 4. *Cap.* 110.

PTOSIS, πτῶσις, from πίπτω, to fall. This imports falling down, and is a Diſorder of the Eye-lid, conſiſting in the Deſcent of the ſuperior Eye-lid, either on account of a Palſy of the Muſcle, which ſhould elevate it; or a Flux of Humours, which depreſſes it.

PTYALAGOGA, from πτύελον, Saliva, or Spittle; and ἄγω, to bring away. Medicines which promote a Diſcharge of Saliva.

PTYALISMOS, πτυαλισμός. A frequent and copious Diſcharge of Saliva. *Hippocrates*. Among the Moderns, it generally ſignifies a Salivation excited by Mercury.

PTYAS. The Name of a Species of Aſp. See ASPIS.

PTYELON, πτύελον. The Saliva, Spit, or Spittle. See SPUTUM.

PTYGMATA, πτύγματα, from πτύσσω, to fold. Folded Cloths. *Cœlius Aurelianus*. Perhaps what we call *Stuphs*.

PTYSIS, πτύσις. A Defluxion of Humours upon the Thorax, or Lungs. *Cœlius Aurelianus*, *Chron. Lib.* 2. *Cap.* 7.

PTYSIS, alſo, implies Exputition, or Spitting.

PTYSMA, πτύσμα. The Spit, or what is brought up by Spitting, or Expectoration.

PTYSMAGOGA. Medicines which promote a Diſcharge of Saliva.

PUBES. See ABDOMEN.

PUBIS OS. See INNOMINATA OSSA.

PUCHAMIAS. The Name of a Tree which grows in *Virginia*, bearing a Fruit like a Medlar, extremely aſtringent, whilſt immature; but, when ripe, of a delicious Taſte. *Raii Hiſt. Plant.*

PUDENDA. The private Parts in both Sexes.

PUDENDAGRA. The Venereal Diſeaſe.

PUERPERA. A lying-in Woman.

PUFFINUS. A Sea-bird, which the *French* call a *Macreuſe*, that is reckoned in the Number of wild Ducks: It is dark-coloured, and flies heavily; but, when it has a mind to come haſtily away from a Place, the Bird ſuſtains itſelf upon the Ends of its Wings and Feet, and, in this manner, runs lightly and ſwiftly upon the Surface of the Water: This Bird feeds upon Inſects, Sea-weeds, and Fiſh: Its Fleſh is hard, and like Leather, eſpecially when it is old; and, therefore, it ſhould not be eaten but when young: This ſame Fleſh taſtes, alſo, of Fiſh; and the *Roman* Catholics allow the Uſe of it in *Lent*.

PUGILLUS. A Pugil. The eighth Part of an Handful.

PULEGIUM.

The Characters are;

The Flowers, which are very ſmall, are diſpoſed in cloſe thick Whorles, and their upper Lip is entire: In other reſpects this Herb reſembles the *Mentha*, or Mint.

Boerhaave mentions four Sorts of Pulegium; which are,

1. Pulegium; latifolium. *C. B. P.* 222. *Boerh. Ind. alt.* 186. *Pulegium*. Offic. J. B. 3. 256. Raii Hiſt. 1. 533. Synop. 3. 235. *Pulegium regium*. Ger. 545. Emac. 671. *Pulegium vulgare*. Park. Theat. 29. *Mentha aquatica ſeu Pulegium vulgare*. Tourn. Inſt. 189. PENYROYAL.

Penyroyal has many creeping fibrous Roots; from which ſpring a great many ſmooth roundiſh Stalks, hardly able to ſupport themſelves, but leaning on the Ground, and ſending out ſmall Fibres, by which it roots itſelf in the Ground: It bears two ſmall, round, but yet pointed Leaves, at a Joint: The Flowers grow towards the upper Part of the Branches, coming forth juſt above the Leaves, in thick cloſe Whorles; they are of a pale-purple Colour, ſmall and galeated, ſet in ſmall, ſomewhat downy Calyces, in which grow four ſmall Seeds. The whole Plant has a very ſtrong Smell, and an hot aromatic Taſte: It grows frequently upon moiſt Commons, and in Places where Water has ſtood all Winter, and flowers in *July*. But what we uſe in the Shops is generally cultivated in,

in Gardens, where it grows tall and large: The whole Herb is uſed.

It is hot and dry, of very ſubtile volatile Parts, and is peculiarly appropriated to the Female Sex, being a good Uterine, provoking the Menſes and Lochia, expelling the Birth and Secundines: It, likewiſe, warms and comforts the Bowels, and helps the Colic and Jaundice, and is good againſt Coughs and Shortneſs of Breath: The Juice, or a ſtrong Decoction of the Leaves, ſweetened with Sugar, has been accounted a Specific againſt a whooping Cough.

Officinal Preparations are only the diſtilled Water and Oil. *Miller's Bot. Off.*

This Plant, which is very bitter, acrid, and of a very penetrating Smell, gives a deep Tincture of Red to the blue Paper; ſo that it is probable, it contains a volatile, aromatic, and oily Salt, loaded with Acid; whereas, in the artificial, volatile, oily Salt, this Acid is detained by the Salt of Tartar.

Thus this Plant is aperitive, hyſteric, and good for the Diſeaſes of the Stomach and Breaſt; ſince it evacuates thoſe glutinous Sordes, which fill part of the Bronchia, and Veſicles of the Lungs; eſpecially if it is boiled with Honey and Aloes; for then (as *Dioſcorides* obſerves) it purges, and procures Expectoration. *Tragus* very much commends the Decoction of Penyroyal in White-wine, for the Suppreſſion of the Menſes, and Fluor Albus. The Juice of this Plant, according to the ſame Author, clears the Sight, and removes Lippitude. *Montanus* preſcribed the Powder of Penyroyal, mixed with equal Quantities of Vinegar, Honey, and Water, for the Diſeaſes of the Eyes. The Conſerve of its Flowers and Leaves is good for the Dropſy and Jaundice. *Ray* affirms, from Mr. *Boyle*, that a Spoonful of the Juice of Penyroyal is a good Remedy for the Chin-cough of Children. *Cheſneau* preſcribes a Glaſs of its Decoction for Hoarſeneſs; and adviſes to take it before going to Bed. *Martyn's Tournefort.*

2. Pulegium; anguſtifolium. *Ger.* 546. *Emac.* 672. *Raii Hiſt.* 1. 534. *C. B. P.* 222. *Boerh. Ind. alt.* 186. *Pulegium cervinum.* Offic. *Pulegium anguſtifolium ſive Cervinum.* Park. Theat. 30. *Pulegium cervinum anguſtifolium.* J. B. 3. 257. *Mentha aquatica Satureiæ folio.* Tourn. Inſt. 190. HART PENYROYAL.

This grows more erect than the common Penyroyal, with much longer and narrower Leaves, ſomewhat like Savory; the Flowers grow in thick Whorles, like the former, and the Smell is much alike; but this is rather pleaſanter. It grows in *Provence* and *Languedoc* in *France*, and in divers Parts of *Italy*.

It has the ſame Virtues with the common Penyroyal, and is, by the Phyſicians about *Montpelier*, preferred before it; but is ſeldom or never preſcribed here, or brought into our Shops. *Miller's Bot. Off.*

3. Pulegium; anguſtifolium; flore albo. *H. R. Par. Mentha, aquatica, Satureiæ folio, flore albo.* T. 190.

4. Pulegium; latifolium; hirſutum; flore cœruleo. *Boerh. Ind. alt. Plant. Vol.* 1.

Beſides the foregoing Species of Pulegium, *Dale* mentions the following;

PULEGIUM ERECTUM. Offic. An. *Pulegium latifolium alterum.* C. B. P. 222. UPRIGHT PENYROYAL.

This Plant grows in marſhy Places: The Herb itſelf is uſed, and in Virtues agrees with the common Penyroyal. *Dale.*

PULEX. A Flea.

PULICARIA. A Name for the PSYLLIUM.

PULMO. The Lungs.

The Lungs are two large ſpongy Bodies, of a reddiſh Colour in Children, greyiſh in adult Perſons, and bluiſh in Old-age, filling the whole Cavity of the Thorax; one being ſeated in the Right Side, the other in the Left, parted by the Mediaſtinum and Heart, and of a Figure anſwering to that of the Cavity which contains them, that is, convex next the Ribs, concave next the Diaphragm, and irregularly flatted and depreſſed next the Mediaſtinum and Heart.

When the Lungs are viewed out of the Thorax, they repreſent, in ſome meaſure, an Ox's Foot, with the fore Part turned to the Back, the back Part to the Sternum, and the lower Part to the Diaphragm.

They are diſtinguiſhed into the Right and Left Lung; and each of theſe into two or three Portions, called *Lobi*; of which the Right Lung has commonly three, or two and an half, and the Left Lung two. The Right Lung is generally larger than the Left, anſwerably to that Cavity of the Breaſt, and to the Obliquity of the Mediaſtinum.

At the lower Edge of the Left Lung, there is an indented Notch, or Sinus, oppoſite to the Apex of the Heart, which is, therefore, never covered by that Lung, even in the ſtrongeſt Inſpirations; and, conſequently, the Apex of the Heart and Pericardium may always ſtrike againſt the Ribs; the Lungs not ſurrounding the Heart in the manner commonly taught. This Sinus is expreſſed in *Euſtachius*'s Tables.

The Subſtance of the Lungs is almoſt all ſpongy, being made up of an infinite Number of membranous Cells, and of different Sorts of Veſſels, ſpread among the Cells, in innumerable Ramifications.

This whole Maſs is covered by a Membrane, continued from each Pleura, which is commonly ſaid to be double; but what is looked upon as the inner Membrane, is only an Expanſion and Continuation of a cellular Subſtance.

BRONCHIA.

The Veſſels which compoſe part of the Subſtance of the Lungs, are of three or four Kinds; the Air-veſſels, Blood-veſſels, and Lymphatics: To which we may add the Nerves. The Air-veſſels make the principal Part, and are termed *Bronchia.*

Theſe Bronchia are conical Tubes, compoſed of an infinite Number of cartilaginous Fragments, like ſo many irregular Arches of Circles, connected together by a ligamentary elaſtic Membrane; and diſpoſed in ſuch a manner, as that the lower eaſily inſinuate themſelves within thoſe above them.

They are lined on the Inſide by a very fine Membrane, which continually diſcharges a mucilaginous Fluid; and in the Subſtance of the Membrane are a great Number of ſmall Blood-veſſels, and, on its convex Side, many longitudinal Lines, which appear to be partly fleſhy, and partly made up of an elaſtic Subſtance of another Kind.

The Bronchia are divided in all Directions into an infinite Number of Ramifications, which diminiſh gradually in Size; and, as they become capillary, change their cartilaginous Structure into that of a Membrane. Beſides theſe very ſmall Extremities of this numerous Series of Ramifications, we find, that all the ſubordinate Trunks, from the greateſt to the ſmalleſt, ſend out, from all Sides, a vaſt Number of ſhort capillary Tubes, of the ſame kind.

VESICULÆ BRONCHIALES.

Each of theſe numerous Bronchial Tubes is widened at the Extremity, and thereby formed into a ſmall membranous Cell, commonly called a *Veſicle:* Theſe Cells, or Folliculi, are cloſely connected together in Bundles; each ſmall Branch producing a Bundle proportionable to its Extent, and the Number of its Ramifications.

Theſe ſmall veſicular, or cellulous Bundles, are termed Lobules; and as the great Branches are divided into ſmall Ramifications, ſo the great Lobules are divided into ſeveral ſmall ones. The Cells, or Veſicles, of each Lobule have a free Communication with each other; but the ſeveral Lobules do not communicate ſo readily.

The Lobules appear diſtinctly to be parted by another cellulous Subſtance, which ſurrounds each of them, in proportion to their Extent, and fills up the Interſtices between them. This Subſtance forms, likewiſe, a kind of irregular, membranous Cells, which are thinner, looſer, and broader, than the Bronchial Veſicles.

This Subſtance is diſperſed through every Part of the Lungs; forms cellulous, or ſpongy Vaginæ, which ſurround the Ramifications of the Bronchia and Blood-veſſels; and is afterwards ſpread over the outer Surface of each Lung, where it forms a kind of fine, cellular Coat, joined to the general Covering of that Viſcus.

When we blow into this interlobular Subſtance, the Air compreſſes and flattens the Lobuli; and, when we blow into the Bronchial Veſicles, they preſently ſwell; and, if we continue to blow with Force, the Air paſſes, inſenſibly, into the interlobular Subſtance. We owe this Obſervation to M. *Helvetius.*

All the Bronchial Cells are ſurrounded by a very fine reticular Texture of the ſmall Extremities of Arteries and Veins, which communicate, every Way, with each other. The greateſt Part of this admirable Structure is the Diſcovery of the illuſtrious *Malpighi.*

BLOOD-VESSELS.

The Blood-veſſels of the Lungs are of two Kinds; one common, called the Pulmonary Arteries and Veins; the other proper, called the Bronchial Arteries and Veins.

The Pulmonary Artery goes out from the Right Ventricle of the Heart; and its Trunk, having run almoſt directly upward, as high as the Curvature of the Aorta, is divided into two lateral Branches, one going to the Right Hand, called the Right Pulmonary Artery; the other to the Left, termed the Left Pulmonary Artery. The Right Artery paſſes under the Curvature of the Aorta, and is, conſequently, longer than the Left. They both run to the Lungs, and are diſperſed through their whoſe Subſtance, by Ramifications nearly like thoſe of the Bronchia, and lying in the ſame Directions.

The Pulmonary Veins, having been diſtributed through the Lungs, in the ſame manner, go out, on each Side, by two great

Branches, which open laterally into the Reſervoir, or muſcular Bag, of the Right Auricle.

The Ramifications of theſe two Kinds of Veſſels in the Lungs are ſurrounded, every-where, by the cellular Subſtance already mentioned, which, likewiſe, gives them a kind of Vagina; and the Rete mirabile of *Malpighi*, deſcribed above, is formed by the capillary Extremities of theſe Veſſels. It muſt be obſerved, that the Ramifications of the Arteries are more numerous, and larger, than thoſe of the Veins, which, in all other Parts of the Body, exceed the Arteries, both in Number, and Size.

Beſides theſe capital Blood-veſſels, there are two others, called the bronchial Artery and Vein; the Artery has become very famous, of late, by the Deſcription given of it by M. *Ruyſch*. The Vein was doubted of, for ſome time; but it exiſts as really as the Artery, and may be eaſily demonſtrated.

Theſe two Veſſels are very ſmall, appearing only like very fine Arteries and Veins coming from the Aorta, Vena Cava, and their Branches; and they ſeem to have no other Uſe, but that of nouriſhing the Lungs.

The Varieties in the Origins of the bronchial Arteries and Veins, eſpecially of the Arteries, their Communications, or Anaſtomoſes, with each other, and with the neighbouring Veſſels, and, above all, the immediate Anaſtomoſis of the bronchial Artery with the common pulmonary Vein, are of great Conſequence, in the Practice of Phyſic.

The bronchial Arteries come ſometimes from the anterior Part of the Aorta deſcendens ſuperior, ſometimes from the firſt intercoſtal Artery, and ſometimes from one of the OEſophagææ. They go out, ſometimes, ſeparately, towards each Lung; ſometimes by a ſmall common Trunk, which afterwards divides to the Right and Left, near the Biſurcation of the Aſpera Arteria; and follow Ramifications of the Bronchia.

The Left bronchial Artery comes often from the Aorta, and the Right from the ſuperior Intercoſtal, on the ſame Side, becauſe of the Situation of the Aorta: There is, likewiſe, another, which ariſes from the Aorta poſteriorly, near the ſuperior Intercoſtal, and above the anterior Bronchialis.

The bronchial Artery gives off a ſmall Branch to the Auricle of the Heart, on the ſame Side, which communicates immediately with the coronary Artery.

In the Year 1719. I obſerved a very plain Anaſtomoſis between ſome Branches of the Left pulmonary Vein, and of one of the Arteriæ OEſophagææ, which came from the firſt Left Intercoſtalis, together with a bronchial Artery of the ſame Side.

In that, or the following Year, I likewiſe obſerved an Anaſtomoſis between the Left bronchial Artery, and the Vena Azygos; and in *April* 1721. I ſaw an Anaſtomoſis between a Branch of this Artery, and the Body of the juſt-mentioned Vein.

Sometimes one bronchial Artery gives Origin to ſeveral ſuperior Intercoſtals, and ſometimes ſeveral bronchial Arteries ſend off ſeparately the ſame Number of Intercoſtals. The bronchial Veins, as well as Arteries, were known to *Galen*; theſe Veins are ſometimes Branches of the Azygos, coming from the upper Part of the Curvature, or Arch. The Left Vein is ſometimes a Branch of the common Trunk of the Intercoſt of the ſame Side; and ſometimes both Veins are Branches of the Gutturalis.

Nerves.

The Lungs have a great many Nerves diſtributed through them, by Filaments which accompany the Ramifications of the Bronchia and Blood-veſſels, and are ſpread on the Cells, Coats, and all the membranous Parts of the Lungs. The Nervi Sympathetici medii, and majores, commonly called Nerves of the eighth Pair, or the Intercoſtals, form, behind each Lung, a particular Intertexture, called Plexus pulmonaris, from whence nervous Filaments go out, which communicate with the Plexus Cardiacus and Stomachicus.

Lymphatic Veſſels.

On the Surface of the human Lungs, between the external and cellular Coat, we obſerve ſomething that looks like lymphatic Veſſels; but we ought to take care not to miſtake, for ſuch Veſſels, a tranſparent reticular Subſtance, obſervable on the Surface of the Lungs, after blowing ſtrongly into the Lobuli; this Appearance being entirely owing to the Air which paſſes through the bronchial Veſicles into the interlobular Cells, and which, by ſeparating a certain Number of Lobuli, finds Room to lodge between them. The true lymphatic Veſſels of the Lungs are moſt viſible in Brutes; and in an Horſe, particularly, I have obſerved one of theſe Veſſels to run along a great Part of one Edge of the Lungs.

Ligaments.

Under the Root of each Lung, that is, under that Part form'd by the ſubordinate Trunk of the pulmonary Artery, by the Trunks of the pulmonary Veins, and by the Trunk of the Bronchia, there is a pretty broad membranous Ligament, which ties the poſterior Edge of each Lung to the lateral Parts of the Vertebræ of the Back, from that Root all the Way to the Diaphragm.

Trachea, or Aspera Arteria.

The Bronchia, already deſcribed, are Branches or Ramifications of a large Canal, partly cartilaginous, and partly membranous, called Trachea, or Aſpera Arteria. It is ſituated anteriorly, in the lower Part of the Neck, from whence it runs down into the Thorax, between the two Pleuræ, through the upper Space left between the Duplicature of the Mediaſtinum, behind the Thymus.

Having reached as low as the Curvature of the Aorta, it divides into two lateral Parts, one towards the Right-hand, the other towards the Left, which enter the Lungs, and are diſtributed through them in the manner already ſaid. Theſe two Branches are called Bronchia, and that on the Right Side is ſhorter than that on the Left; whereas the Right pulmonary Artery is the longeſt.

The Trachea is made up of Segments of Circles, or cartilaginous Hoops, diſpoſed in ſuch a manner, as to form a Canal open on the back Part, the Cartilages not going quite round; but this Opening is filled by a ſoft glandular Membrane, which completes the Circumference of the Canal.

Each Circle is about the twelfth Part of an Inch in Breadth, and about a Quarter of that Space in Thickneſs; their Extremities are round, and they are ſituated horizontally above each other, ſmall Interſtices being left between them, and the lower Edge of the ſuperior Segments being turned toward the upper Edge of thoſe next below them.

They are all connected by a very ſtrong elaſtic membranous Ligament, fixed to their Edges. I have obſerved the firſt three Segments united into one, bent alternately in two different Places, according to its Breadth: Sometimes two are continuous in the ſame Manner.

The Canal of the Aſpera Arteria is lined on the Inſide by a particular Membrane, which appears to be partly fleſhy, or muſcular, and partly ligamentary, perforated by an infinite Number of ſmall Holes, more or leſs imperceptible, through which a mucilaginous Fluid continually paſſes, to defend the inner Surface of the Trachea againſt the Acrimony of the Air which we breathe.

This Fluid comes from ſmall glandular Bodies, diſperſed through the Subſtance of the Membrane, but eſpecially from Glands ſomething larger than the former, which lie on the outer or poſterior Surface of that ſtrong Membrane, by which the Circumference of the Canal is completed. The ſame Structure is obſervable in the Ramifications of the Trachea, from the greateſt to the ſmalleſt.

All the Veſſels of which the Lungs are principally compoſed, that is, the Air-veſſels, or Bronchia; and Blood-veſſels, that is, the pulmonary and bronchial Arteries and Veins; accompany each other through this whole Viſcus.

They are diſpoſed, commonly, in ſuch a manner, even to the laſt Ramifications, as that a ſubordinate Trunk or Branch of the Bronchia lies between the like Trunks or Branches of the pulmonary Artery and Vein; the bronchial Veſſels being immediately joined to the Bronchia. In ſome Places theſe three Kinds of Veſſels touch each other, in ſuch a manner, as to leave a triangular Space in the Middle.

The Bronchia are divided into a very great Number of Ramifications, and the laſt Branches are the Pedicles or Foot-ſtalks of the ſmall Lobuli. All the Lobuli are angular, oblong, broad, and thin; the Foot-ſtalks ſend out other ſmall membranous Pedicles, which are very ſhort, and terminate in the bronchial Veſicles, or Cells, of which they are Continuations. The ſubordinate Trunks and Ramifications detach a great Number of theſe Pedicles from their convex Surface.

When we blow into the Lungs, the bronchial Cells, neareſt their outer Surface, appear like ſmall Portions of round Veſicles; and, from this Appearance, all the bronchial Cells have got the Name of Veſicles, though they are all angular, except thoſe which I have now mentioned.

When we examine a Lung, without blowing it up, we find, that the cartilaginous Segments of the Bronchia lie ſo near, as to be engaged in each other; and, in drawing out any Portion of the Bronchia by the two Ends, theſe Segments are parted, and the whole Canal is increaſed in Length; but it contracts again, by means of its elaſtic Membrane, as ſoon as that Force is taken off.

When we open, lengthwiſe, any Portion of the pulmonary Artery and Vein, in the ſame Lung, we meet with a great Number of tranſverſe Rugæ, which are deſtroyed when theſe Veſſels are elongated: This is an Obſervation made by *Helvetius*.

By virtue of this Structure, all the Ramifications, both of the Bronchia, and pulmonary Arteries and Veins, have conſtantly the ſame Direction, whether the Lung be inflated, or collapſed; and they contract in Length, without being either contorted, or folded. In Expiration, theſe Veſſels are elongated, and ſhortened in Inſpiration.

Theſe three Veſſels lie in a ſort of cellular Vagina, which accompanies all their Ramifications, and is a Continuation of the interlobular Cells, or cellular Subſtance in the Interſtices of the Lobuli. The Pelliculæ which compoſe it, are, however, diſpoſed there, in a more regular manner, and more longitudinally, than in other Places; and thereby appear to form a true Vagina.

When we blow through a Pipe, introduced ſo far as to touch immediately a Trunk of the Blood-veſſels, or Bronchia, the Air runs, at firſt, through all the Cells that lie neareſt that Trunk, or its Branches; but if we continue to blow, it inſinuates itſelf through the whole interlobular Subſtance.

Bronchial Glands.

At the Angle of the firſt Ramification of the Trachea Arteria, *we find, on both the fore and back Sides*, certain ſoft, roundiſh, glandular Bodies, of a bluiſh, or blackiſh Colour, and of a Texture partly like that of the Thymus, and partly like that of the Glandulæ Thyroides. There are other Glands, of the ſame Kind, at the Origin of each Ramification of the Bronchia; but they decreaſe proportionably, in Number and Size: They are fixed immediately to the Bronchia, and covered by the interlobular Subſtance; and they ſeem to communicate, by ſmall Openings, with the Cavity of the Bronchia.

The Trachea has ſeveral Coats; the outermoſt, or common, Covering ſurrounds that Part of the Trachea which lies in the Thorax; but out of the Thorax, this firſt Coat is derived from the aponeurotic Expanſions of the Muſcles of the Neck; and it is between this, and the following Covering, that the Glands, already mentioned, are ſituated.

The ſecond is a proper Coat, being a Continuation of the cellular Covering of the Lungs; and the Pellicles thereof, neareſt the cartilaginous Segments, ſerve them for an external Perichondrium. The third Membrane lies on the Inſide, adhering cloſely to the ſame Cartilages, and ſupplying, to theſe, the Place of an internal Perichondrium.

The fourth Membrane is that which completes the Circumference of the cartilaginous Circles of the Trachea: It conſiſts, principally, of two Laminæ, or Strata, partly muſcular, and partly tendinous; the external, or poſterior, Lamina being made up of longitudinal Fibres; and the internal, or anterior, of tranſverſe Fibres. This Membrane is perforated by the ſmall Ducts of the above-mentioned Glands, which diſcharge a Fluid, when preſſed; and, being examined through a Microſcope, they appear veſicular, or folliculous, much like thoſe of the Stomach.

The Ligaments between the cartilaginous Circles are very ſtrong, and elaſtic; and each of them is confined to two Cartilages, without communicating with any of the reſt; being fixed to the Edges of theſe Cartilages, much in the ſame manner as the intercoſtal Muſcles are inſerted in the Ribs.

As the Bronchia penetrate into the Subſtance of the Lungs, they gradually loſe their Cartilages; but the muſcular Lines, or Columnæ, of *Morgagni* appear as much, and ſometimes more than before. The two Planes above-mentioned continue, likewiſe, to be viſible; and we obſerve very diſtinctly, ſometimes, even without a Microſcope, a great many ſmall Holes in the Pedicles of the Lobuli, and bronchial Veſicles, or Cells, which open from within outwards.

Uses.

Reſpiration is performed by Organs of two Kinds, one of which may be looked upon as active, the other as paſſive. The Lungs are of the ſecond Kind; and the firſt comprehends, principally, the Diaphragm, and intercoſtal Muſcles.

As ſoon as the intercoſtal Muſcles begin to contract, the Arches of the Ribs are raiſed, together with the Sternum, and placed at a greater Diſtance from each other; by which means, the Cavity of the Thorax is enlarged on the two lateral and anterior Sides.

At the ſame Inſtant, the Diaphragm is flatted, or brought toward a Plane, by two Motions, which are, apparently, contrary; that is, by the Contraction of the Diaphragm, and the Dilatation of the Ribs, in which it is inſerted. The external Surface of the Thorax being thus, in a manner, increaſed, and the Cavity of the Bronchia being, at the ſame time, and by the ſame means, leſs reſiſted, or preſſed upon, the ambient Air yields to the external Preſſure, and inſinuates itſelf into all the Places where the Preſſure is diminiſhed; that is, into the Aſpera Arteria, and into all the Ramifications of the Bronchia, all the Way to the Veſicles. This is what is called Inſpiration.

This Motion of Inſpiration is inſtantaneous, and ceaſes in a Moment, by the Relaxation of the intercoſtal Muſcles; the elaſtic Ligaments, and Cartilages of the Ribs, bringing them back, at the ſame time, to their former Situation. This Motion, by which the Ribs are depreſſed, and brought nearer each other, is termed Expiration.

The pulmonary Arteries and Veins, which accompany the Bronchia through all their Ramifications, and ſurround the Veſicles, tranſmit the Blood through their narrow capillary Extremities, and thereby change or modify it, at leaſt, in three different Manners.

The firſt Change, or Modification, which the Blood undergoes in the Lungs, is to have the Coheſion of its Parts broken, to be attenuated, pounded, and, as it were, reduced to Powder. The ſecond is, to be deprived of a certain Quantity of Serum, which tranſpires through the Lungs, and is what we commonly call the Breath. The third is to be, in a manner, re-animated, by the Impreſſion of the Air, whether the whole Body of the Air enters the Blood, whether the common Air is only the Vehicle of ſome finer Parts which are conveyed to it, or whether the Air only compreſſes, or ſhakes the Blood, as it paſſes round the bronchial Veſicles in the reticular capillary Extremities of the Veſſels.

The Cartilages of the Aſpera Arteria, and Bronchia, ſerve, in general, to compoſe a Canal, the Sides of which will not ſink in, or ſubſide, by Compreſſion, but will, nevertheleſs, yield to certain Preſſures and Impulſes, without breaking. As theſe Cartilages are not complete Circles, or Rings, and as their Circumferences are completed by elaſtic Membranes, they allow of theſe Dilatations and Contractions, which modulate the Voice; and as they are connected by elaſtic Ligaments, of a conſiderable Breadth, the alternate Elongation and Contraction of the Bronchia is facilitated, in the Motions of Reſpiration. *Winſlow's Anatomy.*

PULMO MARINUS. *Offic. Aldrov. Exang.* 577. *C. B. P.* 369. *Jonſ. Exang.* 56. *Bellon. Aquat.* 438. *Geſn. Aquat.* 760. *Rondel. Aquat.* 2. 131. *Charlt. Exer.* 68. SEA LUNGS.

This Subſtance floats in the Sea; is of a pellucid bluiſh Colour, reſembling, in ſome meaſure, that of Cryſtal; and is ſo tender, that it can hardly be taken out of the Sea entire. When recently triturated, and uſed by way of Ointment, it cures Gouts and Chilblains. *Dioſcor. Dale.*

This Subſtance, according to *Lemery*, in his *Traité des Drogues*, contains a large Quantity of Oil, and of Salts, both of the volatile, and fixed Kind. It removes the Hairs, when applied to any Part covered with them. A Lixivium, prepared of calcined Sea Lungs, with a large Quantity of Water, if drank, is proper to diſſolve the Stone, excite the Menſes, and provoke Urine.

PULMONARIA.

The Characters are;

The Calyx is like a Tube, pentagonal, and quinquefid. The Flower is monopetalous, cylindrical in its lower Part, and ſhaped like a Baſon above, with its Margin cut into five round Segments. From the Sides of the internal cylindrical Part, which are neatly fimbriated, ariſe five Stamina.

Boerhaave mentions ſix Species of *Pulmonaria*; which are,

1. Pulmonaria, vulgaris; latifolia; flore albo. *T.* 136. *Boerh. Ind. A.* 193. *Pulmonaria maculoſa.* Offic. Ger. 662. Emac. 808. Raii Hiſt. 1. 488. Park. Parad. 448. *Pulmonaria Italorum ad Bugloſſum accedens.* J. B. 3. 595. *Symphytum maculoſum ſive Pulmonaria latifolia.* C. B. P. 259. SAGE OF JERUSALEM.

The lower Leaves of this Plant are large and oval, five or ſix Inches long, growing on broad Foot-ſtalks, thick-ſet with fine Hairs, of a deep Green above, and ſpotted with white Spots; but of a paler Green, and unſpotted, underneath. The Stalks riſe to be near a Foot high, having ſeveral ſmaller Leaves on them; and on their Tops grow ſeveral Flowers together, each in a long hairy Calyx, having their Brims appearing but a little above it, of a reddiſh Colour, being ſingle, and Cup-faſhion, cut at the End into five round Segments; and are each ſucceeded by four rough Seeds, growing in the Bottom of the Calyx. The Root is ſmall and fibrous. It is planted in Gardens, and flowers in *May*; the Leaves are uſed.

This is accounted a pectoral, balſamic Plant, and good for Coughs, Conſumptions, Spitting of Blood, and the like Diſorders of the Lungs: It is, likewiſe, put into Wound-drinks, and traumatic Decoctions; being agglutinating, and good to heal Wounds and Ulcers, and old Sores. *Miller's Bot. Off.*

The Pulmonaria has a ſaltiſh, herby, glutinous Taſte, and reddens the blue Paper pretty much; it is very ſweetening. It is uſed in Ptiſans, and Broths made of Calves Lungs, for the Diſeaſes of the Breaſt, when the Spittle is ſalt, or purulent. *Martyn's Tournefort.*

2. Pulmonaria; Alpina; foliis mollibus, ſubrotundis; flore cæruleo. *T.* 136. *Symphytum maculoſum.* Dod. p. 135.

3. Pulmonaria; foliis Echii. *Ger.* 662. *Emac.* 808. *Raii Hiſt.* 1. 489. *Synop.* 3. 226. *Tourn. Inſt.* 136. *Boerh. Ind. A.* 193. *Pulmonaria anguſtifolia rubente cæruleo flore.* C. B. P. 260. *Pulmonaria anguſtifolia.* Park. Parad. 248. *Pulmonaria rubro flore, foliis Echii.* J. B. 3. 597. *Symphytum maculoſum ſeu Pulmonaria maxima, foliis quaſi Saccharo incruſtatis.* Raii Hiſt. 3. 266. NARROW-LEAVED SAGE OF BETHLEHEM.

This Plant is cultivated in Gardens, and flowers in *May*. Its Leaves are only uſed, and, in Virtues, agree with thoſe of *the Sage of Jeruſalem*. Dale.

4. Pulmonaria; folio non maculoſo. *Cluſ. H.* 169. *Symphytum, minus, non maculatum, Germanicum, anguſtifolium, floribus è rubentibus cæruleis.* M. H. 3. 444.

5. Pulmonaria; major; non maculoſa. *J. B.* 3. 493.

6. Pulmonaria; Orientalis; calyce veſicario; foliis Echii; flore purpureo, infundibuliformi. *T. Cor.* 6. *Boerh. Ind. alt. Plant. Vol.* 1.

This Plant contains a mild, benign Juice; but is no more efficacious in Diſorders of the Lungs, than Borage, or Houndſtongue, ſince it is equally proper in all Diſorders where Medicines of a demulcent, emollient, and relaxing Quality, are indicated.

It is, like Mallows, of an emollient, conglutinating, conſolidating, moiſtening, and inſpiſſating Quality. The Flowers or Leaves are recommended in a Spitting of Blood, an Hectic, and a Phthiſis. It is claſſed among the vulnerary Plants, and accounted highly beneficial in Hoarſeneſs, and long-continued Coughs. Hence it is proper in a Pleuriſy, a Peripneumony, and Hepatides, where Expectoration is required. It procures a free Breathing, and is beneficial to the Kidneys. *Hiſt. Plant. adſcript. Boerh.*

PULMONIA. The ſame as PERIPNEUMONIA.

PULPA. The Pulp of Fruits.

PULPEZIA. An Apoplexy.

PULS. The ſame as ETNOS.

PULSATILLA.

The Characters are;

The Root is fibrous and perennial; the Leaves are jagged, and ſurround the Stalk like a Crown, as in the *Anemonoides*, and *Anemone*. The Apex of the Stalk is expanded into a Placenta, whoſe Baſe has its Bottom ſurrounded with a naked, hexapetalous Flower, furniſhed with very numerous Stamina, which ariſe from the Bottom of the Placenta within the Petals. The Ovary becomes a little globous Head, to which grow Numbers of little hairy Huſks, furniſhed with a long hairy Sheath, ending in a ſort of long ſlender Capillament, like a plumous Tail.

Boerhaave mentions two Species of *Pulſatilla*; which are,

1. Pulſatilla; folio craſſiore; & majore flore. *C. B. P.* 177. *Tourn. Inſt.* 284. *Raii Synop.* 3. 260. *Boerh. Ind. A.* 39. *Pulſatilla.* Offic. *Pulſatilla vulgaris.* Ger. 314. Emac. 385. Park. Theat. 341. Raii Hiſt. 1. 633. *Pulſatilla Anglica purpurea.* Park. Parad. 199. *Pulſatilla purpurea cæruleave.* J. B. 3. 409. PASQUE-FLOWER.

This Plant is ſo acrid, that the mere Vapour of its Leaves, rubbed between the Fingers, ſeems to burn the Noſe, and penetrate to the very Brain: It might be made uſe of in the Lethargy; the Leaves bruiſed are applied to Ulcers, but eſpecially to the Wounds of Horſes.

By the chymical Analyſis this Plant yields ſome Marks of Acidity, a great deal of Sulphur and Earth, and a little fixt, and no volatile concrete Salt. *Martyn's Tournefort.*

2. Pulſatilla; flore minore; nigricante. *C. B. P.* 177. *Boerh. Ind. alt. Plant.*

PULSATIO. Pulſation; that is, a morbid Senſation of ſomething beating in any Part. Hence a ſort of Pain, attended with this ſort of Senſation, is called a pulſatory Pain.

PULSILOGIUM. A Pulſe-watch, or Inſtrument to meaſure the Celerity of the Pulſe. *Sanctorius* is ſaid to be the firſt Inventor of this Machine; and Sir *John Floyer* has wrote a Treatiſe expreſly upon this Subject.

PULSUS.

No Doctrine has been involved in more Difficulties than that of Pulſes; ſince, in giving a phyſiological Account of them, Phyſicians have eſpouſed quite oppoſite Sentiments; whilſt ſome doubt whether the Pulſe is owing to the Syſtole, or the Diaſtole; as, alſo, whether the Motion of the Heart and Arteries is one and the ſame for a Moment of Time: Others, eſpecially among the Antients, mention an incredible Number of different Pulſes, moſt of which can neither be felt by the Touch, nor comprehended by the Mind. Others run into the oppoſite Error, and will only admit of two or three different Kinds of Pulſes. Others take different Kinds of Pulſes for one and the ſame Species, whilſt others aſſert, that their Diſtinction is abſolutely neceſſary, to prevent Confuſion and Blunders in Practice. Thus many of the Moderns affirm a quick and frequent Pulſe to be the ſame; whilſt others maintain, that the Diſtinction between them is of the laſt Importance in Practice. A vehement, ſtrong, large, and quick Pulſe, are now-and-then ſaid to be of the ſame Species; whilſt others will have them to be entirely diſtinct: And, indeed, if we conſult Experience, we ſhall hardly ever find two Phyſicians agreeing in their Appellations of the Patient's Pulſe. The Opinions of the Learned are no leſs various, with reſpect to the Uſe of the Doctrine of the Pulſes in Practice; whilſt ſome aſſert, that they are highly fallacious Signs in moſt Diſorders, and can only be of Uſe in ſome Fevers; whilſt others aſſert the Knowledge of Pulſes ſo neceſſary to a practical Phyſician, that he cannot, without it, form a certain Prognoſtic; eſpecially with reſpect to latent Diſeaſes; for which Reaſon, they, with the *Chineſe*, greatly eſteem the Knowledge of the Pulſes; and maintain, that they ought to be, for a long time, accurately explored, in various Parts of the Body. But, in all Probability, the Origin of thoſe Differences is, that the Antients were ignorant of the Circulation of the Blood, and invented different Species of Pulſes, from the ſpeculative and abſtracted Differences of any ſolid Body, at different Times, variouſly impelled. But as the Moderns have rarely applied the Doctrine of the Circulation of the Blood to Pathology and Practice, *ſo they have reſted contented with the Rules of the* Antients, with reſpect to Pulſes, without attempting a juſt Account of their Nature and Differences, from the Diſcovery of the Circulation of the Fluids. But, to lay a Foundation for Certainty in this Point, and prevent future Miſtakes, I ſhall, from the Laws of Mechanics, and eſpecially from the Circulation of the Blood, ſhew the Nature, Differences, and practical Uſe of Pulſes.

But, before we proceed to this, we ſhall, for the ſake of Accuracy and Connection, give the Phyſiology, or natural Conſtitution, of the Pulſe; that the Truths connected with it may be the better diſcovered and explained. But here a Controverſy occurs; which is, Whether the Motion of the Heart be the ſame with the Pulſe; or whether, at the ſame time the Heart is in its Syſtole, the Arteries are ſo too, and the Syſtole of the Heart and Arteries is the true Pulſe; or, rather, whether the Syſtole of the Heart, and Diaſtole of the Arteries, are not reciprocal; or whether, when the Heart is in its Syſtole, the Arteries are in their Diaſtole; and whether the Pulſe is not the Syſtole, but, rather, the Diaſtole, of the Arteries. *Sennertus*, in his *Inſtitut. Lib.* 3. *Part* 1. *Sect.* 4. *Cap.* 1. embraces the former of theſe Opinions; and informs us, that the Heart and Arteries are dilated, and contracted, at one and the ſame time; and that it is raſh, not to acquieſce in the Evidence of Senſe. He ſeems, indeed, in the Part now quoted, to oppoſe his own Opinion, by a Doubt conveyed to his Reader, in the following manner: "If, at the ſame time in which the Heart is contracted, and "expels its Contents, the Arteries were alſo contracted, it "would follow, that the Arteries could not receive the Blood; "and, on the contrary, that at the time the Heart and Ar"teries are at once dilated, the Heart could not receive the "Blood from the Arteries; becauſe theſe mutual Attractions "would hinder each other." Yet he anſwers this Doubt, in the following manner, by telling us, "That no Diſadvantage "ariſes from this, ſince the Arteries are not ſo compreſſed, and "ſhut up, as that they are abſolutely capable of receiving "nothing; but ſtill retain a ſufficient Cavity for receiving that "which is tranſmitted by the Heart; as, alſo, that the Heart "receives Blood from the Lungs; and that the Arteries not "only receive Blood from the Heart, but, alſo, from the ad"jacent Parts, and the Veins, in their Dilatation." But 'tis eaſy to perceive, that this Doctrine is entirely inconſiſtent with the juſteſt Notions of the Circulation of the Blood; of which *Sennertus* was ignorant.

But it is ſurpriſing, that ſome, ſufficiently acquainted with the Circulation of the Blood, ſhould tread in the Steps of *Sennertus*, and aſſert, that the Motion of the Heart, in its Syſtole, is the ſame with the Motion of the Arteries perceived in the Pulſe; and that the Syſtole of the Heart, by way of Eminence, denotes the Pulſe: By this means, they pretend to refute thoſe who aſſert, that the Motion of the Heart and Arteries is not the ſame, but alternate. It is, alſo, ſurpriſing, that ſo great Men as *Galen*, and *Johannes Baptiſta Montanus*, in *Lib.* 1. *de Pulſibus dignoſc. Cap.* 5. ſhould affirm, that the Syſtole, or Contraction of the Pulſe cannot be perceived; but even reject the Opinion of thoſe who believe, that when the Pulſe vibrates, the Artery is in its Diaſtole. But we aſſert, with almoſt all the Moderns, that the Pulſe is nothing but the Dilatation or Expanſion of the Arteries by the Blood, protruded, by the Contraction of the Heart, from its Left Ventricle, into the Arteries, which are ſtretched and dilated by the Impulſe of the Blood coming from the Heart, and communicated to the whole Fluids; then, after their Dilatation, they not only recoil, and are reſtored to their former Figure, but are, alſo, in ſome meaſure, farther contracted, and, with a new Impulſe, propel the Blood more into the minute Arteries and Origins of the Veins: For, according to *Bellini*,

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in *Tract. de Pulsibus*, the Arteries have a double Motion, the one a Dilatation, or the Impressions they make on the Finger; and the other a Contraction, or receding from the Finger; which, according to *Galen*, is not to be perceived without great Difficulty: For the Circulation of the Blood, on which Life depends, is carried on, without Intermission, by the reciprocal Motions of the Heart and Arteries: Nor, without these, can the Motion of the human Fluids be accounted for. When, therefore, the Heart is in its Systole, and expels its Contents, the Arteries are in their Diastole, and receive them. So, also, when the Arteries, in consequence of the large Number of spiral and muscular Fibres, of which they consist, contract themselves, the Veins and Heart are in their Diastole, and receive the Blood from the Arteries. *Galen* entertained the same Opinion, which excellently quadrates with the Circulation of the Blood. For, in *Lib.* 7. *Anatom. administr.* he tells us, *That the Pulsation of the Heart and Arteries is such, that when the Heart is filled, the Arteries are emptied; and when the Heart is emptied, the Arteries are filled.* *Fernelius* is, also, of the same Opinion: *For*, says he, *the Pulse consists of a Systole and Diastole; the latter is a Dilatation or Expansion of the Artery every Way; whereas the former is a Contraction or Subsiding of it in every Dimension.*

With respect to Pulses, there is no small Difference of Opinions and Sentiments; for almost all the Antients maintained, that all the Species of them were distinct, and different from each other; whereas some of the Moderns take the quick, and the frequent, Pulse for one and the same, as is sufficiently obvious from their Works. Others, fond of being thought uncommonly wise, dissent from them; and affirm, that there is so great a Distinction between them, that a practical Physician would look upon the Man as a Fool, who should give them out for the same Pulse. But, in order to get clear of all Doubts and Difficulties, we shall more accurately investigate this Matter. The Antients, then, were unanimously of Opinion, that since the Pulse was a local Motion, whatever was requisite to the latter, or could be affirmed or denied of it, was, of course, applicable to the former. Now, according to *Galen* and *Sennertus*, five Things are requisite to local Motion: First, a moving Cause. Secondly, the Space through which the Body is moved. Thirdly, the Time consumed during the Motion. Fourthly, Rest, when Bodies, moving in opposite Directions, meet. And, fifthly, the Instrument by which the Motion is performed. From these they deduce the simple Differences of Pulses. Upon the moving Cause depend Vehemence and Weakness; hence a vehement, or weak, Pulse are produced. On the Space or Quantity of the Distention, or Dilatation, depend the Greatness and Smalness of the Pulse. On the Time in which the Artery performs its Motion, depend the Quickness and Slowness of the Pulse. According as the Artery remains long or short in a State of Rest, the Pulse is said to be frequent, or rare. And from the Organ of the Pulse, which is the Artery, and which is sometimes harder, and sometimes softer, arises a soft and hard Pulse.

But though *Sennertus*, in his *Institut.* defines a quick Pulse to be, when the Artery, in a short time, performs its Motion; yet he afterwards confesses, that the Celerity of the Pulse cannot be estimated by Space, because that Space cannot be known by the Touch; for which Reason, in defining a quick Pulse, he orders us to regard the Quality of the Motion; whether, for Instance, it is brisk, or slow. Hence *Fernelius*, and some others, have defined a quick Pulse, such an one as, in a short time, distends the Artery; and a slow Pulse, that which produces the same Effect in a long time. *Bellini*, in *Tract. de Pulsibus*, informs us, *That it is a quick Pulse, which, upon the Application of the Finger, persists a very short time; whereas a slow Pulse continues longer.* According to *Sennertus*, *Fernelius*, and others, it is a frequent Pulse which has a short Time of Rest, or in which there is but a short Time interposed between each Diastole; a rare Pulse is that which has a long State of Rest, or in which there is a long Time between one Distention of the Artery and another; or a frequent Pulse is that which, in a short time, distends the Artery, and becomes perceptible to the Touch; whereas a rare Pulse only produces these Effects at longer Intervals. The Word Frequency cannot, however, be properly applied to Motion; but the Celerity or Slowness, the Intension or Remission, of the moving Force are properly competent to Motion; since every Degree of Motion is to be estimated by its Celerity or Intension, and its Slowness or Remission: But one Motion, considered in itself, cannot be said to be frequent, or rare; but this Difference only holds, with respect to the Plurality and Number of Pulsations happening in a certain determined Time. Thus, for Instance, the Motion, or Impulse, is said to be frequent, when, in half an Hour, Water is an hundred times forced from a Syringe; whereas the Motion is said to be rare, when the Water is forced from it only thirty times during half an Hour. Thus, when a Globe, for Instance, is impelled, the Celerity of the Impulse may justly take place, with respect to each Stroke; and yet these Strokes be applied more rarely, or at longer Intervals; and thus any Stroke, applied to a Globe, may be remiss, or small, with respect to Violence, and yet frequently repeated.

This Doctrine holds excellently in those Motions which are not continual, but have certain Intervals of Rest, and in which this Distinction is of singular Use; so that quick and frequent Pulses ought not to be joined and confounded with each other. But 'tis far otherwise in the Motion of the Arteries, which is continual, and requires no Rest, in order to carry on a continual Circulation of the Blood from the Heart to the Arteries, from these to the Veins, and from these to the Heart again. It is not to be imagined, that, when after the Pulse, or Dilatation of the Artery, no Motion or Stroke is perceived by the Touch, the Artery becomes inactive, and remains in a State of Rest, since we have already shewn, that, immediately after its Dilatation, it not only by its proper elastic Force, but, also, in consequence of the Influx of the Spirits into its muscular Fibres, recoils, and is contracted; by which Contraction the Blood is forced into the Veins, and a fresh Dilatation of the Artery immediately succeeds. Hence the Pulse may justly be compared to a Pendulum, which performs a continual oscillatory Motion from one Side to another, without any perceptible Rest. With respect to this continual Motion, which the Antients did not understand, but which is sufficiently comprehended by the Moderns, there arises a Dispute, whether Frequency, and Celerity, applied to the Pulse, are separate and distinct from each other. We shall now examine this Difficulty in order to prevent Mistakes: When, therefore, in a Quarter of an Hour, a Physician counts two thousand Pulses in a Patient, he calls the Pulse preternaturally frequent; when, during the same time, he in another Patient counts only a thousand Strokes, he pronounces the Pulse rare. Now, if another Physician, being call'd, should denominate the frequent Pulse quick, and the rare one slow, the Question is, Which of them is in the right? I answer, Both; for, since the Motions of the Heart and Arteries consists in their continual Systole and Diastole, it is impossible, that, during a small Portion of Time, the Number of Pulses should increase, and be observed greater, unless every Systole and Diastole of the Arteries should become more brisk and intense, that is, be performed in a shorter time; just as we observe in the Vibrations of Pendulums, which, the more numerous they are in a certain time, the more short and quick they must of course be; for 'tis to be observed, that the Celerity of one Pulse by itself cannot be perceived, because it hardly lasts an Instant. Hence *Sylvius*, that happy Practitioner, in *Prax. Med. Lib.* 1. *Cap.* 19. informs us, "That the Celerity of the Pulse can be conceived in the Mind, though "not estimated by the Touch." *Bellini*, also, in *Tr. de Pulsibus*, speaks in the following manner: "A quick Pulse, because it affects the Touch but for an Instant, in a State but a "little receding from a natural one, either does not happen at "all, or, if it does, cannot be distinguished by the Touch, "since the natural Dilatation of the Artery hardly lasts an Instant. Much less can the Celerity of the Pulse be perceptible in a preternatural State." Hence 'tis obvious, that a Pulse cannot be called *frequent*, unless it is, at the same time, accompanied with Celerity; nor *quick*, unless it is frequent; because one Stroke cannot be easily distinguished with respect to Celerity. Hence *Schelhammer*, in *Tr. de Pulsibus*, justly observes, that the Frequency of the Pulse is not to be found without a concomitant Celerity. Hence the Reason is obvious, why in physical Authors we never read of a frequent and slow Pulse accompanying each other, or of a quick and rare Pulse going hand-in-hand; which Species of Motions may easily be conceived to happen in an interrupted Motion, but can never occur in one of the continued and uninterrupted Kind. Hence it follows, that the various Species of Pulses are by no means to be refer'd to the Nature of any local Motion, or Impulse of a Body, so as to lay a Foundation for asserting that of the Pulse, which can be affirmed of such a local Motion; for the Antients were ignorant of the Circulation of the Blood, from which all the Species and Differences of Pulses ought to be sought, and accounted for.

'Tis sufficiently known, that almost all Physicians, both antient and modern, constitute a peculiar Difference between a quick and a vehement Pulse, since they call the former *intense*, *quick*, and *brisk*, and its Opposite *remiss*; and the latter *strong* and *robust*, and its Opposite *weak* and *languid*. And as they deduce the Celerity of the Pulse from its Motion performed in a short time, so they derive its Vehemence from the strong or weak Force of the moving Cause. But a considerable Difficulty occurs here; Which is, whether a quick Pulse may not, also, be called *a vehement one*, and accounted as such, since Celerity, in the Opinion of all Mathematicians, is nothing but an increased, or more intense, moving Force. But an Increase,

or an Intenſion of the moving Force, or Celerity, is capable of producing conſiderable Effects, or of overcoming a great Reſiſtance. Now the Vehemence of Motion is only properly applied with reſpect to the Effects, when, for Inſtance, by the Action of the moving Cauſe, a large Quantity of moveable and reſiſting Matter is removed. Hence all who are Maſters of ſtatical and mechanical Learning, agree, that the Celerity of a ſmall Body may be able to remove a large Weight or Bulk of Matter, ſince 'tis certain, that a Globe of a certain Diameter, moving with double Celerity, produces more conſiderable Effects, than a Globe of double the Diameter, moving with leſs Celerity.

Beſides, 'tis remarkable what ſurpriſing Effects are produced by ſome of the moſt ſubtile Bodies, ſuch as Air, Ether, and Fire, when in a quick and rapid Motion. *Galen*, in *Lib.* 3. *de Different. Pulſ. Cap.* 5. ſeems to think, that the Celerity and Vehemence of a Pulſe are not much different from each other, as he informs us in the following manner: "The Word "*Vehemence*, ſays he, is commonly uſed in order to expreſs "ſome ſtrong, and, at the ſame time, quick Action; and the "Perſons who perform ſuch Actions, are called σφοδροί." The ſame Author, alſo, informs us, in the Part laſt quoted, that if he had a Power of giving Names to the Pulſes, he would call the ſimple Quality, or Difference, of ſuch Pulſes as reſiſt the Touch, "*Force* or *Strength*, or ſome ſuch thing; and the Dif-"ference compounded of this Strength, and the Celerity, *Ve-*"*hemence*." But becauſe the Word *Vehemence* is, by moſt Phyſicians, uſed to expreſs one of the ſimple Differences of Pulſes, he thinks it is to be retained, and not changed. But that this Affair may be rendered more clear and perſpicuous, we are here, according to the Principles of Statics and Mechanics, to ſuppoſe that Vehemence may be conſidered in a double reſpect, either with reſpect to the Body in Motion, or with reſpect to the Augmentation of the moving Force. In general, Motion is ſaid to be vehement, when it has great Force, produces great Effects, or overcomes much Reſiſtance. Hence a Pulſe is ſaid to be vehement, which makes a ſtrong Impreſſion on the Hand which feels it; whereas, that is called *languid* and *weak*, which affects the Hand in a faint and languid manner. But Vehemence, with reſpect to the Body in Motion, is, when either its Quantity of Matter, or its moving Force, is great. Hence a Body of great Bulk, and moving Force, is of great Force when put in Motion, or produces a vehement Motion.

The Word *Vehemence* is, alſo, applied to the Increaſe of the Motion, that is, when it becomes briſk, intenſe, and quick. Hence 'tis obvious, that a very ſmall Body may, by being put into a quick Motion, produce very conſiderable Effects; but that a ſtill more conſiderable Efficacy is exerted, when the Quantity of Matter, and the Celerity of Motion, concur. Though, therefore, according to *Galen*, a quick Pulſe, conſidered in itſelf, is never free from Vehemence, yet that Pulſe is only properly and ſtrictly called *vehement*, where a large Quantity of Spirits animate the Fibres of the Heart. This Pulſe, when without Celerity, is called *ſtrong*; but, when accompanied with Celerity, *vehement*, and at the ſame time large, when not a ſmall, but a great Quantity of Blood is forced into the Arteries by one Syſtole of the Heart; and then, which is the Sign of a vehement Pulſe, it beats the Finger ſtrongly, and with a kind of Violence. But becauſe it is not neceſſary, that under a quick Syſtole of the Heart there ſhould always be a great Quantity of Strength or Spirits, nor that the Blood ſhould always be expel'd copiouſly, but few Spirits are often ſufficient, hence the Artery is not in this Caſe forcibly ſtruck, though the Pulſe is at the ſame time quick.

Since the Antients, as we have already obſerved, deduced the Species of Pulſes from the Nature of local Motion, and feigned as many Species of Pulſes as there are Species of Motion; ſo there are, eſpecially in *Galen*, numberleſs Differences of ſimple and compound Pulſes deſcribed with reſpect to Time, Space, Inſtrument, Order, Equality, Proportion of Strokes, and moving Force. But afterwards, when they found theſe ſpeciouſly contrived Differences either incomprehenſible, or uſeleſs in Practice, they juſtly exploded and diſcarded them. Thus *Joh. Bapt. Montanus*, in *Conſil.* 256. frankly confeſſes, that he was ignorant of the minute Differences of the Pulſes; and tells us, that he believed *Galen* had ſomething of the *Greek* Subtilty about him, and laugh'd in his own Mind, when he was reducing the Kinds of Pulſes to their ſeveral Species. He afterwards adds, that though theſe Differences may poſſibly be conceived in the Mind, yet they are not all perceptible by the Touch. *Caſpar Hoffman*, in *Inſtitut.* ſpeaks in the following manner: "The ſhort Compendium of *Goldaldinus*, *de* "*Pulſibus*, is, in my Opinion, preferable to the three Vo-"lumes of *Galen*, concerning the Difference, Cauſes, and "Prognoſtics, of Pulſes. Theſe laſt Works I take to be "*Herophilean* Subtilties, which he might have invented, not "only when young, but, alſo, when he had the Advantage "of Experience and Practice. This Opinion I was induced "to entertain by *Montanus*, in *Conſil.* 257." I was told by a Friend in *Italy*, who heard the Account from the Mouth of *Bartholomæus Schwalbius* himſelf, a celebrated Phyſician of *Prague*, that this Practitioner was content with three Differences of Pulſes, an equal, and an unequal; a quick, and a ſlow; a ſtrong, and a weak. *Plempius*, alſo, in *Fundam. Medic. Lib.* 5. *Sect.* 2. *Cap.* 2. tells us, "That Phyſicians trifle egregi-"ouſly about Pulſes, ſince the Subtilty of ſome of their Minds "had induced them to conſtitute Differences of Pulſes, which "could not be perceived by the Senſes." The celebrated *Welſchius*, in *Oper.* tells us, "That, in the whole Doctrine of "Pulſes, many things uncertain, ſuperfluous, and imaginary, "have long ago been diſcovered by the Learned, who have ob-"ſerved a quite different Motion in the Circulation of the "Blood, which they aſcribe to the Pulſation and vital Force "of the Heart, whilſt others attempt to account for it by "Inventions of their own, rather than by mechanical Reaſons." *Sylvius* has reduced the numerous Differences of Pulſes invented by the Antients, to three Heads, that is, the Strength, the Largeneſs, and the Frequency, of the Pulſe. By a ſtrong Pulſe, he means one of the vehement Kind, which with a certain Force ſtrikes the Finger that touches it. The weak Pulſe is, when it gently, or ſlightly, affects the Finger. The large Pulſe is, when the Artery is dilated much; and the ſmall, when it is only a little dilated, or expanded. The frequent Pulſe is, when, in the ſame Space of Time, the Pulſations happen oftener than at other times, or more frequently than in other Patients. And the rare Pulſe is, when the Strokes or Pulſations of the Artery, happen leſs often than they uſed to do.

But, that we may reduce things to the better Order, and eſtabliſh the genuine Differences of Pulſes, which occur in Practice, both in a natural and preternatural State, we muſt, firſt, from the Principles of Mechanics, ſuppoſe that all Motion is quick or ſlow; for Celerity and Slowneſs are genuine Properties of Motion. Hence *Galen*, in *Lib. de Pulſibus ad Tyrones*, *Cap.* 3. juſtly informs us, that Celerity and Slowneſs properly belong to Motion; that the former is a briſk, and the latter a ſlow and remiſs Motion; and that from theſe we were to form a kind of comparative Judgment concerning the natural Pulſe. Secondly, all Motion is performed in a large, or in a reſpectively ſmall Space; and is conſequently either vehement, or languid. Thirdly, with reſpect to Order, Motion is either equal or unequal; and the Equality is to be underſtood, both with reſpect to Time or Celerity, and with reſpect to Magnitude or Vehemence. And, fourthly, with reſpect to the moveable Body, Motion is either great or ſmall.

Now we ſuppoſe, that the Motion of the Heart and Arteries is continual, and conſiſts of the reciprocal Syſtole and Diaſtole, without any Interruption; for which Reaſon, every Pulſe is either large or ſmall. The large is, when much Blood is by one Contraction of the Heart thrown into the Artery; in conſequence of which, its Dilatation is large and full. The ſmall Pulſe is, when, in conſequence of little Blood forced into the Artery by one Syſtole of the Heart, the Expanſion of the former is but ſmall and inconſiderable. Beſides, the Pulſe is either quick or ſlow. The quick is produced, when the Heart quickly, and in a ſhort time, contracts itſelf, and throws the Blood into the Artery. The ſlow, on the contrary, is, when the Contraction of the Heart requires a longer Time, or when the Conveyance of the Blood into the Artery laſts conſiderably long. But, as, in every Pulſe, the Degrees of Celerity and Slowneſs cannot be accurately eſtimated and computed, becauſe they happen in a Moment, hence, from the Frequency, that is, when, during the ſame time, the Expanſion of the Artery is obſerved oftener than at other times, the Celerity of Pulſes ought to be determined; but in ſuch a manner, that the Frequency be only made the Sign, Characteriſtic, or Meaſure, of the Celerity, and the Rareneſs of the Slowneſs; becauſe Frequency is not applicable to any Motion, conſidered in itſelf. But, in a continual Motion, which, however, conſiſts of different Species, a Syſtole, for Inſtance, and a Diaſtole, where one is perceived, and the other not, we ought in Juſtice to make an Eſtimate of the Celerity from the large Number of the perceived Motions, or Strokes. Thirdly, the Pulſe is either equal or unequal; equal, when there is an exact Equality with reſpect to the Celerity or Frequency of the ſucceeding Pulſes, as, alſo, with reſpect to their Largeneſs and Smalneſs. The Pulſe is ſaid to be unequal, when one Stroke is large, and another ſmall and weak; or when one is quick, and the other very ſlow; ſo that the Pulſe ſeems to be intermittent, though the Intermiſſion of the Pulſe may be more properly referred to that Species of Inequality which conſiſts in a great Slowneſs. Fourthly, the Pulſe is either vehement and ſtrong, or weak: The vehement Pulſe is, when the Syſtole of the Heart is performed by a large Quantity of moving Force, or Spirits; and the weak, when the Heart is contracted by a ſmall Quantity of Spirits.

The Differences, formed by the Antients, of the vermicular, formicating, tremulous, ſerrated, and caprizating Pulſe, depend partly on the Inequality of the Pulſes, but, moſt of all, on the Convulſion of the Coats compoſing the Arteries; for which Reaſon they are almoſt always to be eſteemed dangerous in acute Diſorders. As for the hard and ſoft Pulſe, theſe depend only on the State and Condition of the Artery; for, when, in conſequence of an exceſſive Pain, Spaſms, or Convulſions, the Coats of the Artery become hard, ſo that the Reſiſtance makes a ſtrong Impreſſion on the Touch, the Pulſe is ſaid to be hard. The ſoft Pulſe is, when the Fibres of the Coats of the Arteries are flaccid, relaxed, and moiſt. When a large and vehement Pulſe concurs with ſuch a ſoft State of the Arteries, it is called *an undulating Pulſe*, which is the Forerunner of a profuſe and copious Sweat.

From theſe ſimple Differences, we may eaſily diſcover what Species of Pulſes may be joined with each other, and what not. Firſt, then, there is a Pulſe compounded of the large and quick; of the large and vehement; of the ſtrong and quick; and of the vehement and ſmall. Secondly, there is a Pulſe compounded of the frequent and weak, and of the quick and ſmall. There is, alſo, a ſlow and a large Pulſe, ſuch as that which happens in a natural State, and in plethoric old Perſons, as, alſo, in ſome melancholic and ſcorbutic Patients. But there is never a quick and a ſlow Pulſe, nor a ſlow and a rare, nor a vehement and weak Pulſe, unleſs we intend to confound Words.

As the Motion of the Heart and Arteries depends, firſt, upon the Quantity and Strength of the ſpirituous, elaſtic, and expanſive Subſtance, contained in the Blood, and nervous Fluid; ſecondly, on the due Tone of the muſcular Fibres of the Heart and Arteries; and, thirdly, on the proper Temperature, Quantity, and Conſiſtence of the Blood, ſo it is to be deduced and accounted for from theſe Sources. Now 'tis certain, that Life, Health, and the due Order of the whole Body, depend upon a proper and equable Circulation of the Blood and Humours through the ſolid Parts; ſo that the better regulated, and the more equable, the Circulation is, the more perfectly Nature preſerves herſelf, and cures the Diſeaſes incident to her; and, on the contrary, the more this Circulation recedes from a due and equable State, the weaker Nature is ſaid to be, and the more ſubject to Misfortunes and Diſeaſes. 'Tis, therefore, of the greateſt Importance, that the Phyſician ſhould know the Circulation peculiar to each Patient both in a natural and preternatural State, that he may be the better able to form a Judgment of their Diſpoſition to Diſeaſes, and of the Nature and Event of their Diſorders. Now every one muſt own, that the Circulation of the Blood cannot be better inveſtigated than by feeling the Pulſe, not in a ſuperficial manner, but frequently, and for a ſufficient Time; for the Pulſe not only diſcovers the Imperfections and Strength of the whole Body, but, alſo, the Nature of the Blood, and the State of the various Secretions. And, as a Pendulum of a Clock, by its equable and regular Vibrations, manifeſts the Worth of the Clock; ſo the Pulſe diſcovers the Habit of the Patient, and the Vigour or Depravation of all his Functions.

We now come to inquire what a moderate, conſtant, and equable Pulſe is, ſince it is, as it were, the Rule and Meaſure by which we are to judge of the reſt. A moderate Pulſe, therefore, is that which is large, but neither quick nor ſlow, hard nor unequal. This is the Pulſe with which all others ought to be compared, and which denotes the beſt State of Health, the Abſence of all preternatural and foreign Things, and a due and temperate Degree of Heat; for when ſuch a Pulſe is preſent, the Fluids are duly ſpirituous, the Fibres poſſeſſed of their natural Tone, the Blood temperate and fluid, and conſequently the Tranſpiration free, the Nutrition good, the animal Functions vigorous, the Secretions duly carried on, and the Patient in a State of good Health. But when the Pulſe is quicker, and conſequently more frequent than uſual, it indicates a preternatural Irritation of the Heart, as the Antients expreſs it, unleſs it proceeds from external Cauſes; but if ſuch a Pulſe continues long, it infallibly denotes a Diſorder accompany'd with an Increaſe of Heat, and even a Fever. It is generally produced by an inordinate inteſtine Motion of the Blood, and a Change induced on the Craſis of the Spirits by an Admixture of heterogeneous, and often cauſtic Particles. When the Pulſe is vehement, and, at the ſame time, quick, it indicates a feveriſh Intemperature, an Admixture of ſomething heterogeneous with the Blood, Lymph, and Spirits; but, at the ſame time, a large Quantity of Strength and Spirits. If a vehement and quick Pulſe is, alſo, large, the Circulation of the Blood is briſk, the Heat and Thirſt great, and the whole Habit red and turgid. Where the Pulſe is ſmall, and little Blood is conveyed from the Heart to the Arteries, and from the Veins to the Heart, the Circulation of the Blood is faint and languid. Hence the Tranſpiration and Secretions are but ſmall, and the Strength little: But, if a ſmall Pulſe is, at the ſame time, weak and frequent, or quick, it denotes a great Languor of the Strength, a preternatural inteſtine Motion, and a weak Circulation of the Blood; and, if this Species of Pulſe continues long, it indicates Malignity, and great Danger.

A ſlow Pulſe generally denotes a Viſcidity, Thickneſs, and weak Circulation of the Blood, together with a Languor of the Secretions; but if it is at the ſame time weak, it is dangerous, and raiſes a Suſpicion of a total Loſs of Strength. But a Pulſe which is ſlow and large, denotes ſufficient Remains of Strength, Tenſion, and Thickneſs, of the Fibres, of the Heart and Arteries, and a viſcid and tenacious Blood. All unequal Pulſes are very bad, ſince they denote, that there is neither a due Influx of the Spirits, nor a proper and equal Mixture of the Blood; but, particularly, ſuch Pulſes always prognoſticate unlucky Events, when they are weak. Intermittent Pulſes are, alſo, of a bad Kind, or generally accounted the Preſages of Death. But it is not univerſally ſo, for an intermittent Pulſe frequently happens without Danger, where, for Inſtance, the Symptoms are of a bad Kind, and the Patient's Strength ſtill entire. Hence this Species of Pulſe frequently happens in hypochondriac and melancholic Patients, where the inteſtine Motion of the Blood is diminiſhed by its Thickneſs. But when the Pulſe is weak and quick at the ſame time, it generally prognoſticates Death. An hard Pulſe generally indicates Pains, Spaſms, and Convulſions, becauſe the Fibres of the Heart and Arteries are ſpaſmodically conſtricted. The irregular, caprizating, and diſcontinued Pulſes, denote a very bad State of the Body, both with reſpect to the fluid and ſolid Parts.

It is carefully to be obſerved, that one Kind of Pulſe is not found in all Perſons; for as the Pulſe depends on the Tone of the muſcular Fibres, on the Influx of the Spirits, and the Nature and Temperament of the Blood, and as all theſe are ſurpriſingly various in human Bodies, with reſpect to Age, Sex, the Seaſon of the Year, the Climate, the Method of Life, the Sleep, and the Paſſions of the Mind, ſo, alſo, the Pulſes vary from each other according as theſe Circumſtances differ. Thus Men generally have a large and vehement Pulſe, and Women one of a more ſlow and weak Kind; for the former have ſtronger Fibres, and an hotter Blood, than the latter: For this Reaſon, alſo, the Circulation of the Blood is briſker in Men than in Women, and the former do not generate ſuch Loads of redundant Blood and Humours, as Women, who are generally weaker, and more ſubject to Diſeaſes. Choleric Perſons, and thoſe of ſanguine choleric Conſtitutions, have a larger, quicker, and more vehement Pulſe, than phlegmatic and melancholic Perſons; for which Reaſon the Fluids move more quickly, the Excretions are made more expeditiouſly, and the Blood is more fluid, in the former than in the latter; for the Blood of the former is impregnated with a larger Quantity of oleous and ſulphureous Parts, which are, as it were, the Source and Matrix of Heat, and a ſpirituous Quality. Thus, alſo, thoſe of a ſlender Habit, who have ſtrong Fibres, and large Veſſels, have a larger and ſtronger Pulſe, than thoſe who are fat, have lax Fibres, and narrow Veſſels. Hence they are, alſo, ſounder, more robuſt, and more capable of enduring Fatigue. This is, alſo, the Reaſon, why thoſe who are naturally thick and fat, are more readily ſeized with Sickneſs, and deſtroy'd by it, than thoſe of ſlender Habits.

In Infants and Children the Pulſe is frequent and ſoft, whereas in old Perſons it is ſlow and large, whilſt in young Perſons, and thoſe full-grown, it is large and vehement; for, generally, Infants and Children generate a large Quantity of Humours, which are neceſſary to their Growth, and collect a great deal of Sordes, which is the Reaſon why Infants and Children are more generally ſeized with Sickneſs, and more readily die of it, than Youths and Adults. Old Perſons have thick Blood, but rigid Fibres; for which Reaſon their Pulſe is hard, and makes a forcible Impreſſion on the Touch. But in Infants and Children the Pulſe is ſoft, on account of the Tenderneſs and Laxity of the Fibres. The Pulſe is, alſo, changed by the Seaſon of the Year, the Exerciſe of the Body, the Aliments, and the Affections of the Mind. In the Middle of the Spring, the Pulſe is large and vehement; at this Seaſon, alſo, the Strength is greateſt; for which Reaſon Perſons are at that time moſt rarely ſick, and recover moſt eaſily. In the Middle of the Summer, the Pulſe is quicker and weaker, becauſe, by the intenſe Heat, the Strength is impaired, whilſt the inteſtine Motion of the Fluids is greater than it uſually is. In Autumn the Pulſe is ſlower, ſofter, and weaker, than at any other Seaſon, and in the Winter harder, a little more vehement, and ſlower. Among Kingdoms and Climates, thoſe which are hot and ſultry, may be compared to the Middle of the Summer; thoſe which are cold, to the Winter; and ſuch as are temperate, to the Spring.

Exercise increases the Pulse, and consequently the Circulation of the Blood, whilst an idle and inactive State renders the Pulse slow, weak, and languid, and diminishes the Circulation of the Fluids. Spirituous Aliments render the Pulse large, vehement, and frequent. The Pulse of such as are asleep is slow, small, and languid; but as soon as they awake, it forthwith becomes large, quicker, and stronger. The Pulse of those who are angry is large, vehement, and quick; that of such as are frighted, frequent, small, and inactive; and of those who are sorrowful, small, languid, and slow. So that, according to *Fernelius*, in *Lib.* 3. *de Pulsibus*, "The common "and ordinary Affections of the Body change the Pulse; so "that, without duly adverting to these Affections, the Pulse "cannot be certainly understood, nor can it be determi-"ned how far it recedes from a natural State, in conse-"quence of Diseases." The natural Pulse is, therefore, to be felt and observed, not immediately after Exercise, Bathing, immoderate Eating, drinking Wine, or other Causes, which exagitate the Heart and Spirits; for we are to determine nothing about the Pulse, till the Force of external Causes has ceased, and all Perturbations of the Body are allay'd; for the Pulse is the most certain Sign and Criterion for judging of the Motion of the Heart and Blood. But if the Pulse alone is observed, without paying a due Regard to other Circumstances, it may lay a Foundation for forming a false Judgment; because, as *Celsus* says, in *Lib.* 3. *Cap.* 6. the Pulse may be disturbed by a thousand things.

There has almost always been a considerable Dispute among Physicians, what Pulse is essential to Fevers, or constitutes their pathognomic Sign. Many of the Antients, among whom *Galen* was the first, inform us in their Works, that a quick and frequent Pulse denotes a Fever. But many of the Moderns take a frequent Pulse for the genuine Sign and Characteristic of a Fever. Thus *Sylvius*, in *Prax. Med. Lib.* 2. speaks in the following manner: "A preternaturally frequent Pulse is "the Sign, which, at all times, belongs to a Fever alone, "and is consequently its pathognomic Sign; so that, when this "Sign is present, a Fever is present; and, when it is absent, "so is the other, also; nor is any other Sign universally pro-"per to all Fevers, hitherto discovered by Practitioners." For all other Signs do not so properly denote a Fever, as the Species, the Degree, or the Time, of a Fever. *Etmuller* tells us, "That a preternaturally frequent Pulse is, justly accounted "the pathognomic Sign of Fevers, by *Sylvius*, both in his "*Dissertatio de Natura Febrium*, and in his *Praxis*, whatever "*Deusingius*, in *Tract. de Disquisitione Antisylvana*, may affirm "to the contrary." *Decker*, a practical Physician of *Holland*, in *Not. ad Barbette*, informs us, "That there is a Fever, "where-ever a preternaturally frequent Pulse is observed." *Schelhammer*, in *Tr. de Puls.* tells us, that in all Fevers there is a frequent Pulse, which, when accompanied with Heat, is their pathognomic Sign. The celebrated *Bohnius*, speaks in the following manner: "In a frequent Pulse, the Strength of "the Heart seems equal to the morbific Cause, if this fre-"quent Pulse remains in an uniform manner, and is conse-"quently the pathognomic Sign of Fevers; but if a Weak-"ness of the Pulse is combined with its Celerity, it indicates "Loss of the Strength more or less, as more or fewer and "vehement Strokes are observed." Other Authorities would be of no Use; only we must observe, that, upon a false Hypothesis, not only the Antients, but, also, many of the Moderns, made a Distinction between quick and frequent; for they called the Pulse *frequent*, if within a certain time frequent Pulsations were made, whereas by a quick Pulse they meant one of the the vehement Kind. Hence *Willis*, in *Tr. de Febribus*, calls that a *febrile Pulse*, in which the Arteries vibrate vehemently and quickly; where he, also, asserts, that if the Pulse becomes more vehement, the Fever is augmented. *Cœlius Aurelianus*, in *Lib.* 1. *Acut.* tells us, "That the Sign of Fevers is an in-"tense Heat, and a vehement Pulse, unless it should be pro-"duced by some external Cause."

For these Reasons *Brown*, in *Observationibus Medicin.* every-where asserts, that a quick and a weak Pulse are contrary to each other; so that by the Word *quick*, 'tis obvious, he meant *vehement*. Tho' Authors hardly as yet seem to have formed distinct Notions of Pulses, yet all, both antient and modern, seem to agree in this, that a frequent Pulse in every Species of Fever, whether continual, or intermittent, whether benign, or malignant, whether in its Beginning, or at its Height, proves such a Fever to be present: Hence they always join the frequent either with the quick, or with the weak, Pulse; so that they agree, that the *frequent* Pulse is rather to be called the *essential Sign of Fevers*, than the *quick*, which none of them will hardly assert to be found, either in the Beginning or Horrors of Fevers, or in any of the malignant Kind.

But, from what we have supposed, it is sufficiently obvious, that these Differences may be excellently reconciled, since the quick Pulse is nothing else but the frequent, which is the true pathognomic Sign of Fevers. But this Frequency is either greater or less, and associates itself with the great or vehement, or with the small and weak, according to the Diversity of Fevers, and the Times of the Disease. A frequent Pulse, when weak and small, is scarcely ever good, since it denotes a languid and slow Circulation of the Blood. But a frequent, large, or vehement Pulse, such as is generally observed in the Height of continual Fevers, denotes a brisk Circulation of the Blood, and an increased Heat of the Body. In investigating the Cause of a frequent Pulse, which is generally preternatural, and accompanies several Disorders, we shall follow the accurate *Bellini*, who, in *Tract. de Pulsibus*, accounts for the Motion of the Heart from the Influx of the Blood through the Coronary Arteries, and of the nervous Fluid through the Nerves into the Fibres of the Heart; from which he concludes, that the Muscles of the Heart are most frequently moved, when the nervous Fluid is most frequently convey'd into them, which happens when it is forced into them by a sufficient Quantity of Blood flowing forcibly into the Brain. Now, by a frequent Contraction of the Heart, a frequent Pulse is produced; which indicates, that a proper Quantity of Blood is convey'd to the Brain, and that the Brain is forcibly prest; which will happen, either when the Blood stagnates therein, in consequence of an Obstruction of its Veins; or when the Blood contain'd in these Veins cannot flow into other Parts, the Blood, in the mean time, stagnating, either in the internal Parts, or in the Lungs; or when the Blood is thrown into a State of Effervescence, by which it assumes a Tendency to move in every Direction with a greater Impetus, and by that means presses the Brain more powerfully. The Muscles of the Heart, also, move more frequently, when irritated by any Stimulus. If, therefore, the Blood is too acrid, or hot, so as to stimulate the Sinuses of the Heart, the Heart will be more frequently contracted, and the Frequency of the Pulse will indicate a stimulating Quality in the Blood.

Since we have shewn, that from the Pulse we are to form a Judgment, not only of the Circulation and Temperature of the Blood, but, also, of the Motion of the Spirits, and the Strength of the Patient; so the Knowledge of the Pulse, and a due Attention to it, must be of singular Use to the Physician, not only in investigating the Natures of Disorders, and forming a right Judgment concerning them, but, also, in prescribing Medicines for their Cure. But it is to be observed, that the Pulse is to be carefully, and not superficially, consulted. The Physicians of *China* are far more careful in this respect, than those of *Europe*; for those often spend a whole Hour in feeling the Pulse, whilst the Physicians of our Country have hardly Patience to feel above two Pulsations; a Practice highly culpable, since after ten Strokes of the Artery, an Inequality, or Intermission, often occurs; which happens whilst the unequally mixed Blood passes through the Heart. The Pulse is, also, to be felt in both Wrists, in the Neck, and in the Temples, since 'tis certain from Experience, that the Pulse in the Wrists frequently varies, and may be more commodiously felt in one than in another. We ought, also, to advert to the Pulses of other Parts. Thus, sometimes, hypochondriac Patients perceive a large Pulse under the Ribs on the Left Side; which happens, when a quick and viscid Blood, exagitated by Heat, or any other Cause, endeavours to procure a quick Passage through the Pancreas and Spleen; but, stopping in their narrow Vessels, produces a Pulsation, and a kind of pricking Pain. Hence *Joh. Ant. Vander Linden*, in *Select. Medic.* tells us, "That "the Blood, in this Case, raises a kind of Tumult within, by "pricking and striking on the Spleen." How intense the pricking Pains of the Spleen are, some sound Persons experience, as soon as they are over-heated. *Tulpius*, in *Cent.* 2. *Obs.* 28. mentions a Man who had a preternatural Pulsation in the Spleen. In continual and malignant Fevers, a large internal Pulsation in the Veins of the Head generally denotes a subsequent Delirium; since it is a Sign, that the Blood there congested circulates slowly, till at last, becoming stagnant, it produces a violent Inflammation of the Meninges. *Hippocrates*, in *Coac. Prænot.* informs us, "That if a large Pulse arises "from an excessive Ebullition of the Blood, so that in Fevers "the Veins of the Temples beat, and the Face is turgid, "without a Softness of the Præcordia, there is Reason to su-"spect, that the Disease will be long, and that it will not "terminate without a large Hæmorrhage from the Nose, an "Hiccup, Convulsions, or Sciatic Pains." The Reason of this, in my Opinion, is, that the redundant Blood seeks for an Outlet, either by the Nose, or the hæmorrhoidal Veins; and the sooner this happens, the sooner the Patient is freed from his Disorder.

When

When a Pulſation is obſerv'd in any Part of the Body, where at other times it is not felt, we may certainly conclude, that the Part is inflam'd, and diſpos'd to a Suppuration; eſpecially when it is accompanied with Tumor and Pain. An hard Pulſe is almoſt an infallible Sign of an Inflammation in the Membranous Parts; for this Hardneſs of the Pulſe, or exceſſive Tenſion and Vibration of the Artery, indicates ſomething of a ſpaſmodic Nature, ariſing from the Conſent of the Parts, and produc'd by the Inflammation and Pain. The Pulſe of Perſons labouring under Diſorders of the Breaſt, or a Palpitation of the Heart, is generally frequent, unequal, and languid. But ſuch a Pulſe, unleſs when vehement, is accompanied with no preternatural Heat; and happens becauſe the Blood does not paſs thro' the Sinuſes of the Heart, and the Lobes of the Lungs. In Weakneſs, and a Diſpoſition to Syncopes, the Pulſe is generally ſmall, rare, and languid; but if the Pulſe is abſolutely imperceptible, the Body cover'd with a cold Sweat, and the Functions of the Mind are not totally deſtroy'd, I have frequently obſerv'd, that the Patient infallibly dies in ſix Hours; and ſuch a Situation I have ſeen twice produc'd by corroſive Poiſon. It is to be obſerv'd, that about the critical Times in Fevers, when Nature endeavours to throw off the ſuperfluous and peccant Matter by Stool or Sweat, the Pulſe, tho' languid, is yet more regular, and leſs frequent, which is a certain Sign of Recovery. But if the Pulſe is ſoft and undulating, it is a Sign, that a ſalutary critical Sweat is juſt coming on.

It is, alſo, to be obſerv'd, that the Pulſe is chang'd by Medicines. Thus, after draſtic Purgatives, which procure too many Stools, the Pulſe is generally preternaturally quick. After Veneſection, eſpecially in plethoric Habits, the Pulſe becomes quicker, a Sign that the Circulation of the Blood, in conſequence of its having a larger Space, is happily increas'd; ſince, by this means, a Suppreſſion of the Menſes or Hæmorrhoids is generally remov'd. 'Tis certain, not only from the Authority of *Sydenham*, but, alſo, from Experience, that after the Uſe of Chalybeates, the Pulſe is quicker, the Face redder, and the Heat greater. Strong Sudorifics, compos'd of volatile oleous Subſtances, greatly increaſe the Pulſation of the Heart and Arteries. On the contrary, Anodynes, Opiates, Preparations of Nitre, precipitating Powders, Acids, and ſuch things as diminiſh the inteſtine Motion of the Blood, and fix its Sulphur, render the Pulſe calm and moderate in Pains, Inflammations, and a febrile Intemperature. Such an Effect I, alſo, once ſaw produc'd by a due Mixture of Nitre and Camphire. As Dr. *Willis* has juſtly obſerv'd in *Tract. de Febribus*, ſome very uſeful and important Rules for the Exhibition of Medicines are drawn from the State of the Pulſe. Thus Purging and Vomiting are contra-indicated by a too quick and vehement Pulſe; as, alſo, by a low and depreſs'd Pulſe; for when the Blood is in a violent Motion and Ebullition, the Secretions are generally very languid. If the Strength is defective, which may be known by the languid State of the Pulſe, Emetics and Purgatives diminiſh the Strength ſtill more; ſo that the Phyſician ought to conſult the Pulſe, before he exhibits them; for when the Pulſe is ſtrong, and the Motion of the Blood regular, theſe artificial Evacuations are moſt beneficial, and ſucceed beſt. The ſame Caution is neceſſary in the Exhibition of Sudorifics, and all Analeptics, which convey Heat and Motion to the Blood; for if the Pulſe is ſtrong and frequent, ſuch ſpirituous Subſtances do more Injury than Good, becauſe they rarefy the Blood too much, and accelerate its inteſtine Motion; by which means a Delirium, and other Inflammations, are frequently brought on. Great Circumſpection, and Attention to the Pulſe, is, alſo, requiſite in the Exhibition of Narcotics or Opiates; for as theſe are poſſeſs'd of a Power of ſtopping the Motion of the Blood and Spirits, and conſequently of impairing Strength, ſo they ought never to be exhibited when the Pulſe is weak, languid, and ſmall, but are to be avoided like Poiſon. But if the Pulſe is unequal and intermitting, Opiates readily procure a perpetual Sleep. *Fred. Hoffman.*

PULVERATIO, or PULVERISATIO, Pulveriſation, in Pharmacy, is the reducing any Subſtance to a Powder. See TRITURATIO and PULVIS.

PULVILLUS, in Surgery, is a Pledget, Bolſter, or Compreſs.

PULVIS. A Powder.

The Operation of reducing Medicines into Powders is ſo very ſimple in itſelf, that it requires no other Skill, than having thoſe Things which come under its Management, ſufficiently dry, in order to be ſo divided.

In judging of the Fitneſs of Materials for this Treatment, only theſe two Conſiderations neceſſarily require our Attention. The firſt is, whether the Things themſelves are thus reducible, without any previous Management, that may hurt their medicinal Virtues; and, next, whether their Virtues are conveniently preſerved in this Form, when reduced into it.

Under the firſt of theſe, it naturally occurs, that viſcid and oily Subſtances cannot be thus managed, without firſt reducing them to ſome Brittleneſs, which cannot be done without drying. If ſuch things, therefore, cannot be ſufficiently dried for Triture, without exhaling their better Parts, or deſtroying that particular Quality, for which the Simple is valued in Medicine, as it happens with many Seeds and Gums, they are much fitter for ſome other Forms than for this; though theſe Inconveniences may be avoided, where ſuch Things bear ſo ſmall a Proportion to thoſe which are very dry and brittle, that they are ſo loſt, and, as it were, abſorbed by them in Triture, that all paſs the Sieve well enough together. But this, however, ſhould make the Preſcriber wary of crouding into any Compoſition, under this Form, too many Gums or Seeds; and the Preparer careful in giving them a requiſite Brittleneſs by drying; which latter may, in ſome meaſure, be known by the Compoſitions preſerving the Scent, or particular Qualities, of the Ingredients ſuſpected.

The other Requiſite in this Form, relating to the Preſervation of Things reduced into it, directs not to preſcribe Materials therein, which are volatile, or will any other way change in the open Air: Thus the finer Aromatics will decay, and every thing very volatile, as the Radix Ari; for which Reaſon it is now ordered to be mixed at the time of taking. All the alcaline Salts, likewiſe, are not to come into this Form, becauſe they will diſſolve in Air; on which Account the Salt of Wormwood is an improper Ingredient in the *Pulvis Radicum Ari compoſitus*. Theſe latter Inconveniences may indeed be, in ſome meaſure, avoided, by keeping ſuch Compoſitions as have in them theſe exceptionable Ingredients, in Veſſels ſtopt cloſe from the Air: But the Neceſſity of frequently opening them in the Shops, for common Occaſions, will ſubject them more to ſuch Decay, than is conſiſtent with keeping them any long time good.

Having a View of theſe two Requiſites, we are better able to judge, both of officinal and extemporaneous Preſcriptions in this Form: And, for our better Inquiry into the former, it may be, alſo, of Uſe, as is already done in ſome other Forms, to range them under ſuch general Intentions, as they ſeem contrived, by their firſt Inventors to anſwer.

The *Species Diambræ*, *Pulvis Diacinnamomi*, *Species Dianthus*, and *Pulvis lætificans Galeni*, ſeem, by moſt of their Ingredients, to be intended for Cephalics and Cordials, as they conſiſt of the warmer Spices, and Simples of ſimilar Properties; but in the *Pulvis Diacinnamomi* the Caſia is much inferior to the Cinnamon in Flavour, and gives a Sliminеſs to the moiſt Form; but the Elecampane-root is a powerful Detergent, and quite out of the Intention. The Sugar, likewiſe, occaſions an unneceſſary Bulk in a Doſe, when given in Powder, an Electuary, or a Bolus; and therefore would be better omitted. In the *Species Dianthus*, the Liquorice is blameable, on the ſame Account as the Elecampane-root in the foregoing; and in the *Pulvis lætificans Galeni*, the Raſuræ Eboris, Epithymum, Os è Corde Cervi, and Margaritæ, are chargeable with contributing nothing to the main Intention of a Cordial, though the Leaf Silver and Gold are very beautiful Decorations, if rubbed but coarſely in at laſt, that they may be ſeen to Advantage; but the Camphire, it is to be feared, will render it not ſo fragrant while it laſts, though even very cloſe Keeping will not long retain its Volatility.

Some others, near approaching to this Intention, take in Simples, that give them, alſo, an Aſtringency; ſuch as the *Aromaticum Roſatum*, *Pulvis Granorum Kermes compoſitus*, and *Pulvis Cardiacus Magiſtralis*; none of which are chargeable with an uſeleſs or unſuitable Ingredient, unleſs the Bezoar be reckoned ſo in the latter: However, it is pretty certain, that its Virtues do not compenſate for its Coſt; and indeed not much can be ſaid for the Saunders and Aloes-wood; but the Cuſtom of mixing them with thoſe things has long prevailed.

The *Pulvis Diacalaminthes ſimplex*, thus intituled, in Diſtinction from a much larger Compoſition given in former Diſpenſatories, and the *Species Diatrion* and *Pipereon*, ſeem principally intended for Carminatives; though the former hath ſomething in it aimed, alſo, againſt Hyſterical Affections, and is pretty much uſed in both theſe Intentions with Succeſs. The *Pulvis de Gutteta* was heretofore a Compoſition, conſiſting principally of ſuch things, as were ſuppoſed to be very efficacious in ſome nervous Caſes, by their ſpecific and ſecret Virtues; as the Viſcus Quercus, the Ungula Alcis, and Cranium Humanum; but there are now added many things of very manifeſt Properties, as the Radix Valerianæ, Contrayervæ, and Serpentariæ; but whether the calcined Hartſhorn, Coral, Hyacinth, and Bezoars, will yet allow this to be duly reformed, and an uniform Compoſition, is much to be doubted; for if they can, with the Specific before-mentioned, be ſuppoſed to contribute any thing to the main End, yet it muſt be allowed to be ſo little, that they have not their Share, but are a Clog upon the Efficacies of ſome others, which, by theſe means, cannot be ſo conveniently given in their due Quantities. By long Experience, it has, likewiſe, been found, that Muſk does Harm in many nervous Caſes: Where, therefore, there is Reaſon to judge it proper, it is very eaſily ordered at the time of extemporaneous Preſcription. The Leaf Gold, as was before obſerved, is an agreeable Ornament, and can do no Harm. The *Pulvis Cephalicus* is deſigned for a Snuff.

The

The next Claſs of alterant Species may be reduced under the Title of Alexipharmics, at the Head of which it may be thought Injuſtice not to put the compound Powder of Crab's-claws: But the Lapis Contrayervæ ſeems to come under the ſame Rank much more properly; which the preſent Practice acknowledges, by taking notice of it much oftener than the other, though the greateſt Dependence upon this is from the Contrayerva-root, which, both in its Smell and Taſte, manifeſtly diſcovers the Quality of an Alexipharmic, which principally conſiſts in a volatile Pungency.

The *Pulvis Radicum Ari compoſitus* is the only Compoſition in this Form, that aims at being an antiſcorbutic; but its principal Ingredients, as has been already obſerved, will not keep long in this Form; and, when mixed with Boluſes or Electuaries, the Oculi Cancrorum, and Sal Abſinthii, ſoon make it ferment and ſour.

Some of this Form are given for Emollients and Diuretics, as the *Species Diatragacanthæ frigidæ*, *Pulvis Haly*, *Pulvis Saxifragiæ compoſitus*, and *Pulvis Dialthææ*. But the principal Ingredients of theſe, eſpecially of the former three, which are the cold Seeds, thoſe of Poppies, and the like, are not only difficult to powder, but, when ſo reduced, will ſoon grow rancid. The Starch and Sugar are, indeed, ſome Helps againſt the firſt Inconvenience, by aſſiſting the oily Seeds to paſs the Sieve, and they ſeem intended for no other Purpoſe; but they are not ſufficient to preſerve them, when ſo done. Beſides, all theſe things are ſo much eaſier brought into Emulſions, and with ſuch greater Advantages to the Patient, that theſe Forms are now little uſed. The *Pulvis Dialthææ* does not, indeed, take in ſo many of theſe oily Seeds, and is more agglutinant by reaſon of the Quantity of Gums in it; but it is not often met with in common Preſcription.

All the reſt of this Diviſion of Compounds, unleſs the *Pulvis Antilyſſus*, are Cathartics. The greater and leſſer Compoſitions with Sena are ſo crouded with Seeds and Spices, under the Notion of Correctors, that a ſufficient Quantity for a Doſe makes the Bulk too large to take in any Form; which ſeems to be the Reaſon, why they are very ſeldom preſcribed or made.

But the *Pulvis Diaſenæ* takes in Diagrydium enough to avoid this Inconvenience. There hath been in ſome of the old Diſpenſatories a *Pulvis Artheiticus Turneri*, of which the *Pulvis Diaturpethi compoſitus* ſeems to be a good Abridgment, as taking in ſome of the principal Ingredients, and leaving out many uſeleſs ones, with which that was crouded. The *Pulvis Cornachini*, and *Pulvis Comitiſſæ Warvicenſis*, are exactly the ſame, except in the Proportion of Ingredients, in which reſpect they likewiſe differ but little. They are quick enough of Operation in ſmall Quantities, which occaſions them to be given frequently to Children.

What hath been already taken notice of, as neceſſary to be regarded in the Officinal Preſcriptions of this Form, ſhould, alſo, be equally attended to in the extemporaneous Practice; that is, not to direct any thing in a Powder, which will waſte by its Volatility, or which is not reducible to it, without ſuch previous Management, as will hurt its medicinal Virtues. All volatile Salts, in particular, ought to be avoided in theſe Preſcriptions, as that of Hartſhorn, Sal Ammoniac, and the like; though, in the Salt of Amber, there is ſomewhat ſo fixed, that it will remain a conſiderable time in this Form, without any diſcernible Loſs. Some regard, alſo, in common Practice, is to be had to the Vehicle, with which ſome things have, and others have not, a peculiar Fitneſs for Moiſture. Thus the Æthiops, and every thing that takes in Sulphur, when preſcribed in Powders, ſhould be ordered to be taken in a Syrup, or ſome Pulp, becauſe it is very troubleſome to mix with any thing thinner; its offenſive black Colour is, alſo, beſt diſguiſed with Prunes or any thing of like Kind. Every Powder, likewiſe, that takes in crude Antimony, any of the Mercurials, or Things of light Weight, muſt be truſted in thin Vehicles, becauſe they will immediately ſettle, and, by reaſon of the ſmall Quantities, be liable to be left, at the Bottom of what they are given in. Sufficient Notice hath been already taken of the Unfitneſs of all Salts, made by Incineration, for this Form, and every thing diſſolvable, or any way changeable, by the Air. Powders, likewiſe, which take in any reſinous Subſtances, as Scammony, Reſin of Jalap, or any thing of like Texture, ſhould be directed in Vehicles of ſome Conſiſtence, and be carefully mixed, becauſe in thin ones they are ſubject to run into Lumps, which are not eaſily again diſſolvable.

The Doſes of moſt Powders ought ſeldom to exceed half a Dram, becauſe of the Difficulty of taking them; and, rather than to put things together, which have not ſufficient Efficacy in that Quantity, it is more eligible to have recourſe to things of like Intention in ſome other Form.

There is one Conveniency, indeed, in this Form, which in common Practice may not be ſo duly conſidered as it deſerves; and that is, where Perſons have a great Averſion to many Medicines, they are ſooner decoyed into a Compliance with Powders, than as many Boluſes or Draughts, becauſe they do not make ſo formidable a Shew; but in acute Caſes, where the Stomach has been dried with much Heat, too many of theſe, eſpecially of the warmer Alexipharmics, as the Contrayerva and Snake-root, are not uſually judged ſo proper as the liquid Forms, and the Virtues of the ſame things drawn out by Infuſion. *Quincy's Prælect. Pharm.*

PULVIS ANTILYSSUS. See ANTILYSSUS.

PULVIS RADICUM ARI COMPOSITUS. See ARUM.

PULVIS CARDIACUS MAGISTRALIS:
The magiſterial Cardiac Powder.

Take of oriental Bezoar, and of calcined Hartſhorn, of each one Dram and an half; of white and red Coral prepar'd, white Amber, prepared Pearls, Armenian Bole, Japan Earth, and of Tormentil-root, of each two Drams; of Aloes-wood, Citron-peel, Angelica-root, and Zedoary, of each two Scruples: And make them into a Powder together.

PULVIS E CHELIS CANCRORUM COMPOSITUS. See CANCER.

PULVIS CEPHALICUS:
A Cephalic Powder.

Take of the Leaves of Aſarabacca; Marjoram; and Lilies of the Valley, each any Quantity: And make them into a Powder together.

PULVIS CORNACHINI.
Cornachine's Powder.

Take of ſulphurated Diagrydium, ten Drams; of diaphoretic Antimony, ſix Drams; of Cream of Tartar, two Ounces and an half: Make them together into a Powder.

Schroder tells us, its Author was ſo fond of it, as to write a whole Treatiſe about it, wherein he recommends it in almoſt all Caſes that require Purging. Its Doſe is from eight Grains to one Dram.

PULVIS GRANORUM CHERMES COMPOSITUS.
Compound Powder of Chermes-berries.

Take of Chermes-berries one Dram, of Nutmegs, two Scruples; of Tormentil-root, and of yellow Sanders, of each half a Dram; of Cloves, prepared Pearls, and both Corals prepared, of each one Scruple. Let them all be made into a Powder together.

PULVIS DIACALAMINTHES SIMPLEX:
Simple Powder of Calamint.

Take of Mountain Calamint, Peny-royal, Origany, Seeds of *Macedonian* and common Parſley, and of Hartwort, of each two Drams; of Smallage and Thyme, of each half an Ounce; of Priver-ſeeds, and white Pepper, of each one Ounce: And mix them into a Powder.

PULVIS DIATURPETHI COMPOSITUS:
Compound Powder of Turpeth.

Take of Turpeth, Jalap, and Hermodactyl-roots, of Tartar of Vitriol, each equal Quantities; and make into a Powder, *S. A.* Its Doſe is from half a Scruple to a whole Scruple.

PULVIS DIALTHÆÆ. See ALTHÆÆ.

PULVIS DIACINNAMOMI:
Compound Powder of Cinnamon.

Take choice Cinnamon, fifteen Drams; of Caſſia-bark, and Elecampane-root, of each half an Ounce; of Galangal, ſeven Drams; of Cloves, Long-pepper, both the Cardamoms, Ginger, Mace, Nutmegs, and Aloes-wood, of each three Drams; of Saffron, one Dram; of white Sugar-candy, five Drams: Make them into a Powder.

PULVIS DIASENÆ. See SENA.

PULVIS ERYSIPELATODES. A Mynſichti.

Take of volatile Meal, half a Pound; of calcined Lead, and red Bole, each two Ounces; and of Maſtich, Olibanum, and Ceruſs, each one Ounce: Mix all together, and reduce to a fine Powder.

Pulverize together the Bole, and the Ceruſs: Then pulverize ſeparately the Olibanum in a Mortar, rub'd over with ſome Drops of Oil, and the Maſtich moiſten'd with ſome Drops of Water. Then mix theſe Ingredients, when pounded, with

with the calcined Lead, and the fine Meal, for a Powder, to be preſerv'd for Uſe.

It is proper to dry and cure the Tetter or Ring-worm: A ſmall Quantity of it is to be laid on the Part affected, and cover'd with blue Paper, after the Patient is blooded and purg'd. This Powder may cure a mild and ſimple Ring-worm: But, when it is obſtinate and rebellious, much happier Effects will be produc'd by the following Powder;

Take of the volatile Meal of Barley, half a Pound; of dry Elecampane-root, one Ounce; of the Salt of Lead, and white Precipitate Mercury, each three Drams: Mix all together. *Lemery Pharmacop.*

PULVIS AD GUTTETAM. See GUTTETA.

PULVIS HALY:

Powder of Haly.

Take of white Poppy-ſeeds, ten Drams; Starch, Gum Arabic, and Tragacanth, each three Drams; the Seeds of Purſlain, Marſhmallows, and Mallows, each five Drams; Cucumber, Melon, Gourd, Citruls, and Quince-ſeeds cleanſed, each ſeven Drams; Liquorice, three Drams; white Amber, two Drams; Sugar-candy, the Weight of the Whole: And make them into a Powder. It may be given from half a Dram to two Drams.

PULVIS LÆTIFICANS GALENI:

Galen's Cordial Powder.

Take of cloved Baſil-flowers or Seeds, Saffron, Zedoary, yellow Sanders, Cloves, Citron-peels, Galangal, Mace, Nutmegs, and Storax, each two Drams and an half; Ivory-raſpings, Aniſeeds, Thyme, and Dodder, each a Dram; the Bone of a Stag's Heart, Pearls, Camphire, Ambergriſe, and Musk, each half a Dram; Leaf-gold and Silver, each half a Scruple: Make them into a Powder together, according to Art.

PULVIS MARCHIONIS. See MARCHIONIS PULVIS.

PULVIS COMITIS WARWICENSIS.

Earl of Warwick's *Powder.*

Take of Scammony, prepared with the Fumes of Sulphur, two Ounces; diaphoretic Antimony, one Ounce; the Cryſtals of Tartar, half an Ounce: Make them all together into a Powder. It is a ſmart Purge, and frequently given to Children, againſt Worms, from five to fifteen Grains; and, to Adults, from fifteen Grains to half a Dram.

PUMEX. Offic. Schrod. 355. Matth. 1371. Kentm. 37. Boet. 400. Geſn. de Lap. 31. De Laet. 130. Worm. 47. Charlt. Foſſ. 21. *Scyrus Lapis.* Aldrov. Muſ. Metall. 696. *Lapis Pumex dictus.* Cap. Hort. Cath. Supp. 2. 53. THE PUMICE-STONE.

This is a porous and ſpongious Stone, full of ſmall Cavities and Perforations, and found in *Germany*, whence it is tranſported to us. It is of a refrigerating, drying, and extenuating Quality. It gently cleanſes Ulcers, and renders Cicatrices full and ſeemly. *Schrod.* In Mount *Veſuvius*, *Ætna*, and other burning Mountains, large Quantities of this Species of Stone are found with the Sulphur. The Uſes of it are enumerated by *Wormius* in his *Muſeum*. *Dale.*

PUNCTA LACHRYMALIA. See FISTULA LACHRYMALIS, and OCULUS.

PUNCTICULARIS FEBRIS. An eruptive Fever, or a Fever attended with Purple Spots.

PUNCTUM SALIENS. The firſt Rudiments of the Heart in the Fœtus.

PUNCTURA. A Puncture. *Punctura aurea.* See HERNIA.

PUNICA.

The Characters are;

The End of the Pedicle paſſes into an Ovary, on whoſe Top grows a monophyllous multifid Calyx, of a very florid red Colour, and ſhaped like a Bell. The Flower is roſaceous, polypetalous, growing on the Ovary within the Calyx, and furniſhed with very numerous Stamina. The Ovary, after the Flower is fallen off, and the Stamina wither'd, contracts the Calyx into an Umbilicus, and paſſes into a Fruit, reſembling an Apple, and containing, under a very rough Rind, and vinous Pulp, a Multitude of Capſules full of numerous Seeds;

Boerhaave mentions three Sorts of *Punica*; which are,

1. Punica; quæ Malum Granatum fert. *Tourn. Inſt.* 636. *Boerh. Ind. A.* 2. 250. *Granata, Mala Punica.* Offic. *Malus Punica.* J. B. 1. 76. Rait Hiſt. 2. 1462. *Malus Granata ſive Punica.* Ger. 1262. Emac. 1450. *Malus Punica ſativa.* C. B. P. 438. Park. Theat. 1510. Parad. 428. THE POMEGRANATE-TREE.

This Tree grows not to be of any great Bigneſs, even in its native Countries, having on its Branches here-and-there a few Thorns; the younger Shoots are of a reddiſh-brown Colour, and have their upper End pretty thick-ſet with long narrow ſmooth Leaves, two Inches in Length, to half an Inch in Breadth; among theſe come forth the Flowers, of a glorious ſcarlet Colour, conſiſting of five Leaves, ſet in a rough brown Calyx, which, in time, enlarging itſelf, becomes the Bark or Covering of the Fruit, having a Crown on its upper Part, being, in Shape and Bigneſs, like an Orange, but with a browner and harder Peel, in the Inſide of which grows a great Number of corner'd Acini or Kernels, compacted cloſe together in a regular Order, containing either a ſweet vinous Juice, or one more acid and acerb, with a little Stone in the middle of each. Pomegranates grow in *Spain*, *Italy*, and many other Countries, and flower in *June*, and the Fruit is ripe in *September*. The Balauſtines are the large double Flowers of the wild Pomegranate Tree; which differs not in its manner of Growth from the other. See BALAUSTIA.

The Balauſtines, as well as the ſingle Flowers, and the Bark, are very drying and reſtringent, good for all ſorts of Fluxes, Hæmorrhages, and Bleedings, both inward and outward: They ſtrengthen the Gums, faſten looſe Teeth, help the Falling down of the Uvula, and cancerous Ulcers in the Mouth and Throat. The Fruit is grateful to, and ſtrengthening of the Stomach; ſtops Looſeneſs, and the immoderate Flux of the Terms; and is uſeful in hot bilious Fevers, and Gonorrhœas.

Officinal Preparations are only the Syrup of the Juice. *Miller's Bot. Off.*

2. Punica, fructu dulci. *T.* 636.

3. Punica; flore pleno; majore See BALAUSTIA, and *Punica; quæ Malum Granatum fert. Boerh. Ind. Alt. Plant.*

PUPILLA. The Pupil of the Eye. A Dilatation of the Pupil of the Eye is eſteem'd a Sign of a general Relaxation of the Fibres; and a Contraction thereof, a Mark of Stricture. See OCULUS.

PUPPIS OS. The Os FRONTIS. The Suture in this Bone is call'd the *Sutura Puppis.*

PUPULÆ. The Extremities of the Fingers.

PURETTA. An heavy ſort of Sand, or magnetic Powder, found near *Genoa*, on the Sea-ſhore. It is not us'd in Medicine.

PURGAMENTUM. The *Lochia*; or the Excrements diſcharg'd by Stool.

PURGAMENTUM STELLARUM. The ſame as COELIFOLIUM.

PURGANTIA. Purgative Medicines. See CATHARTICA.

PURGATIO. See CATHARSIS.

PURGATORIUM, in *Paracelſus*, is a Name for any Diſeaſe.

PURPURA. Offic. *Purpura noſtras violacea.* Col. de Purp. 1. *Purpura violacea Fab. Columnæ.* Liſt. Hiſt. Conch. 4. Sect. 15. n. 1. *ex Terentino Sinu allatæ.* Bonan. 150. n. 172. THE PURPLE-FISH.

This Fiſh is frequently found in the *Mediterranean* Sea. In the Shops no Part of it is us'd, except the Shell, which is ſtrong, furrow'd, ſtriated, and rough, with ſhort Tubercles. In former Ages the Sanies of this Fiſh was us'd for dying: The Shell is of an alcaline Quality, and in Virtues agrees with other teſtaceous Medicines.

In deſcribing the Purple-fiſh, the Antients were ſo ſhort and obſcure, as to lay a Foundation for the Moderns to diſpute what kind of Shell-fiſh they meant by that Name, ſince they deſcribe various Species, the Sanies of which dyed a purple Colour. But *Fab. Columna* has determined the Controverſy, by diſcovering the true Purple-fiſh. But tho' at preſent the true Purple-fiſh is hardly known in our Shops, yet, as Dr. *Martin Liſter* obſerves, an Account of its Juice has been traditionally handed down from the earlier Ages to our own Times; but that this Juice was reckon'd among the Arcana, and carefully conceal'd, till Dr. *William Cole* diſcover'd it in *Act. Philoſoph. Lond.* N° 178. Beſides, Dr. *Robert Southwell*, Preſident of the Royal Society many Years ago, informed Dr. *Liſter*, that whilſt his Mother liv'd in *Ireland*, ſhe was famous for ſtaining Handkerchiefs with the Juice of a certain Fiſh, the Colour of which could not be waſhed out. The Art of Dying Purple was, alſo, not only known, but highly eſteem'd, in *England*, in the Times of *Bede*; for, ſays that Author, in *Hiſt. Eccleſ. Gentis Angliæ, Lib.* 1. *Cap.* 1. there are large Number of Shell fiſhes, by means of which a purple Colour is dyed ſo ſtrong and beautiful, that, inſtead of being tarniſh'd by the Influence of the Sun, or the Injury of the Rain, the older it grows, the more beautiful it becomes. *Dale.*

PURPURA.

The Purples, a Diſorder which at preſent rages univerſally, is a Diſeaſe of a peculiar Nature; proceeds from a Scurvy; and is accompanied with an Eruption of Efflorecences on the Surface of the Body, ſometimes with a pretty acute and malignant Fever, and, at other times, without ſuch a concomitant Symptom, gently, though for a long time, diſturbing the Functions of the Body.

As the Purples is a peculiar Species of Exanthematous Diſorder, it is expedient to inquire, by what Circumſtances it may be diſtinguiſhed from other Diſeaſes of the Exanthematous Kind. The peculiar and eſſential Characteriſtics, therefore, of the Purples are theſe following: Firſt, the Papulæ, which appear, are accompanied with a Corrugation, Roughneſs, and Drineſs of the Skin. Beſides, no Exanthematous Matter is ſo moveable, as that of the Purples, which frequently and quickly retire, to the internal Parts, and, after ſome time, appear again on the Surface of the Body. Nor is any of the Exanthematous Diſorders ſo frequently attended with alternate Heat and Cold, Itchings, and pungent Pains. Beſides, all the other Species of Exanthematous Diſorders appear equally on all the Parts of the Body; whereas the Purples principally diſcover themſelves on the Neck, Breaſt, Back, and Arms, rarely infeſting the inferior Parts: By which peculiar Marks it may be eaſily diſtinguiſhed from the Small-pox, Meaſles, Petechial Fever, ſcorbutic Spots, Chicken-pox, that Fever accompanied with Efflorescences reſembling thoſe excited by the Stinging of Nettles, the Herpes, the Itch, Phlyctænæ, and the Impetigo.

The Efflorescences of the Purples differ much with reſpect to Bulk, Figure, and Colour; for ſometimes the Papulæ are red, and ſometimes white. Hence the Purples are diſtinguiſhed into thoſe of the red and thoſe of the white Kind. The former Kind has Veſicles more or leſs broad, which contain a Liquor; whereas the latter has no Veſicles, but only ſmall Nodes, deep-ſeated in the Skin, reſembling the Figure of a Grain of Millet, rough to the Touch, and infarcted with a thickiſh, and, as it were, purulent Humour. Hence the former Diſorder is called the *white Miliary Purples*.

The Purples are, alſo, obſerved to be more or leſs benign or malignant; thoſe of the malignant Kind are more acute than the other, accompanied with a continual Fever, and Symptoms highly offenſive to Nature. But the benign Kind continues long without a Fever, is accompanied with Symptoms leſs offenſive to Life, and ſeizes and proceeds principally with theſe Signs: This Diſorder is preceded by a ſlight Horripilation; which is ſucceeded by an intenſe Heat, accompanied with a Languor, and Loſs of Strength, which, in weak Habits, proceeds to a Deliquium. The Præcordia are conſtricted, and the Breaſt oppreſſed. The Patient, is, alſo, afflicted with deep Sighs, Anxieties, Inquietudes, Watchings, or laborious and diſturbed Sleeps; an Heat, and pungent Pain, are perceived in the Back, whilſt the Heat and Cold are alternate, and moſt ſenſible, in the Palms of the Hands. In Child-bed Women, the Lochia are retained; and the Milk in the Breaſts, being reſorbed, ceaſes to flow from them. Theſe Symptoms are ſucceeded by a Roughneſs and Corrugation of the Skin, like that of a Gooſe, with innumerable Papulæ, either red or white, or both, mixed with each other, in Figure and Smalneſs reſembling Millet-ſeeds; and which firſt appear on the Neck, then on the Breaſt and Back, and, laſt of all, on the Arms and Hands; and, upon the Eruption of theſe on the Surface of the Body, the Symptoms, which were before violent, eſpecially the Anxiety of the Præcordia, the Cardialgia accompanied with a Syncope, the Inquietude, the Compreſſion of the Breaſt, and the Difficulty of breathing, are conſiderably mitigated. The Pulſe, which was before hard and quick, is now ſoft, free, and ſlow; the depreſſed Vigour of the Mind returns; the dry Skin becomes moiſt; and the Patient, who was before ſo coſtive, that he could diſcharge no Flatulences, has his Body rendered ſoluble; and ſometimes not only the Flatulences, but, alſo, the Fæces, are ſpontaneouſly diſcharged.

There is a conſiderable Remiſſion of the Symptoms, either in the red or white Purples, or in a Mixture of both, if they conſtantly continue after the Eruption; for the Veſicles, which are full of a fetid Ichor, are gradually enlarged; nor do they quit their Station, and retire: The Urine is, alſo, more ſaturated; the Sweat, which in this Diſorder is highly fetid, breaks out; the Diſcharge of the Lochia returns; and the Milk is reſtored to the Breaſts; the Body being either ſpontaneouſlly ſoluble, or rendered ſo by a Clyſter, or Suppoſitory, the Fæces and Flatulences are diſcharged; and, in ſeven, or more Days, the Puſtules diſappear, with a conſiderable Itching of the Extremities, and the Patient is gradually reſtored to Health: For all theſe Circumſtances indicate, that the Patient is not exceſſively weak; but that the ſolid Parts as yet retain their moving Force and Vigour; and that the whole Temperature of the Blood, and lymphatic Juice, is not deſtroyed; in conſequence of which, the adventitious and unfriendly Matter is continually and equably ſeparated from the vital Juices, and conveyed from the internal to the external Parts.

But it is otherwiſe in the malignant Purples, in which, after a ſufficient Eruption of the Efflorescences, the Pulſe is preternaturally quick; nor does the Sleep return, nor is the Inquietude allayed, nor the Reſpiration rendered free; beſides, there are generally too copious Profuſions of Serum by Sweat, which, if they happen in the Beginning of the Diſorder, induce a great Loſs of Strength, and, as it were, a paralytic Reſolution of the Skin. Purples of the malignant Kind may be, alſo, known by the pale, thin, and copious Urine, or the continual Stimulus to diſcharge the Urine; as, alſo, when the Urine, which was before high-

coloured and ſaturated, ſuddenly becomes pale, limpid, and thin, in conſequence of the ſpaſmodic Stricture of the Kidneys, and urinary Paſſages.

It, alſo, frequently happens, as a bad Omen, that in the Purples the Puſtules ſometimes appear, and at other times diſappear, whilſt the Symptoms are always equally violent; all which evince, that the Force of Nature is impaired, the Strength diminiſhed, and the Tone of the Skin, that nerveo-tendinous and porous Emunctory, through which the whole Maſs of Blood and Humours is purged, is deſtroyed; ſo that its moſt external, nervous, and ſenſible Portion is ſometimes ſpaſmodically contracted, and ſometimes relaxed. But it is ſtill a worſe Sign, if the peccant Matter, returning, is firmly lodged in the internal Parts, and reſiſts all Attempts to expel it again to the Surface of the Body; by which means the Symptoms are rendered more violent; the Oppreſſion of the Breaſt, and Sighing, are augmented; the Loſs of Strength, and the Anxiety of the Præcordia, accompanied with Inquietude, increaſed; and all the other Circumſtances rendered worſe. Hence all, who are taken off by the Purples, die on account of the Recels of the peccant Matter, and the Increaſe of the Symptoms produced by that Cauſe; for tho', before the Eruption of the Purples, the Matter producing the Diſorder is highly malignant and peccant, yet, when it is ſeparated from the Maſs of Blood, and placed without the Limits of the Circulation, it, by its Continuance, aſſumes a far worſe Nature; and, if it returns to the Parts ſubſervient to Life, eſpecially thoſe deſtined to the Purpoſes of Senſation and Motion, it operates in a manner reſembling that of Poiſon. Hence, as, in all Exanthematous Diſorders, ſuch as petechial Fevers, Small-pox, Meaſles, Gutta Roſacea, Itch, Scal'd-head, Gout, and Arthritis, a certain Matter, unfriendly to Nature, and at the ſame time propelled to the external Parts, renders the Symptoms more violent if it returns to the internal Parts, and mixes with the vital Juices, ſo it is certain from Experience, that, upon the Diſappearance of the Purples, the Sordes received into the internal Parts of the Body are of a like hurtful and prejudicial Quality.

That the Event will be fatal, and that the Death of the Patient is not far off, may be known from the following Signs: If, in conſequence of a deleterious Matter firmly lodged within, the internal Parts are exceſſively hot, whilſt the external Parts, being conſtricted, are covered with a profuſe cold Sweat; or if an intenſe Heat of the external Parts, and a conſiderable Senſe of Refrigeration in the Abdomen, are alternately perceived; if there is a ſubſultory Motion of the Tendons; if the Hippocratic Face appears; if the Defect of Strength increaſes; if an uneaſy Deſpair diſturbs the Mind; and if the Pulſe is hard, unequal, and tremulous: For, if theſe Symptoms happen, the Patient is generally ſoon after ſeized with a Deliquium, which proves mortal.

Though the Purples, with or without a Fever, is often a primary or idiopathic Diſeaſe, yet it is frequently, as a Symptom, complicated with other Diſorders, eſpecially continual Fevers, when near terminating, and is then not without Danger; for it very frequently happens, that the red or white Purples, or both together, happen in the Decline of the Small-pox, Meaſles, putrid Synoche, burning Fevers, petechial Fevers, and thoſe reſembling them, and other epidemical Diſorders; on which Occaſion they induce a new Fever, accompanied with a violent Train of Symptoms; ſo that when Perſons, labouring under acute Fevers, are apparently out of all Danger, they are ſuddenly ſeized with an Horror, Uneaſineſs, Inquietude, Watching, preternatural Heat, and Loſs of Strength, whilſt the Purples, in the mean time, here-and-there appear on the Surface of the Body; and, by extinguiſhing the Strength exhauſted by the preceding Diſorder, generally put an End to the Patient's Life. I have, in a particular manner, often obſerved, that the lymphomatic Purples were fatal to young Perſons labouring under acute Fevers, who have before lived intemperately, indulged themſelves in drinking to Exceſs daily, conſumed their Strength in Venery, and induced a foreign Craſis and Diſpoſition of their Humours; as, alſo, to Patients, who, during the Progreſs of the Diſorder, have been ſo coſtive, as to diſcharge none of the Excrements for ſome Days; and to thoſe, who have had too large Quantities of refrigerating and acidulated Medicines exhibited to them, ſuch as Julaps and Potions. The Purples not only frequently appear in the Decline of acute Diſorders; but, alſo, often, in the Beginning and firſt Days of the Diſorder, ſomething like the Purples appear with a kind of Roughneſs, eſpecially in the Small-pox and Meaſles, tho' very rarely with an happy Termination of the Diſeaſe; for this Circumſtance is an infallible Proof, that the Maſs of vital Humours is filled and contaminated with various excrementitious Sordes. The Purples, alſo, accompanied with a Cough, and Difficulty of breathing, a Vomiting, or Flux, frequently attend the catarrhous Fevers of Children. In this Caſe, if the Diſorder is in the Decline, the Purples are ſucceeded by a Swelling of the Feet, and ſometimes of the Abdomen, with or without a Drineſs of the ſuperior Parts; and the Purples, as is obſerved in the mountainous Parts of the upper *Black Foreſt*, are totally removed by Sweats, either ariſing ſpontaneouſly, or procured by Art.

The red Purples are, from the Beginning, always accompanied with a kind of febrile Commotion, which is perpetually exaſperated towards the Evening: Yet, in Proceſs of Time, the Fever, and Frequency of the Pulſe, are mitigated; the Symptoms allayed; and

and the Diſorder aſſumes a benign Nature. Hence, if, in the Beginning, this Diſorder is imprudently treated, and if the Body is cacochymic, or full of impure Juices, it frequently continues for ſeveral Months, not without great Uneaſineſs to the Patient, and freſh Returns of the Symptoms, though the Diſorder generally terminates happily.

That the Purples are the Offspring of the Scurvy, we have already obſerved: But this will be more effectually evinced, if we diligently conſider the material Cauſe of both Species of Purples, which, as well as that of a Scurvy, depends upon a Dyſcraſy of the Blood. But, in aſſigning this Cauſe, I am of Opinion, that our Sentiments quadrate with Truth, when we affirm, that the red Purples ariſe from an impure, ſaline, acrid, ſulphureous, and excrementitious Serum; and the white Purples, and an acute Miliary Fever, from the Lymph, and nutritous Juice, approaching to an acid, vapid, and putrid Nature; for both theſe Juices of the human Body are of a different Nature; for the Serum is called that Humour, which, being mixed with the Blood, and impregnated with many ſaline and mucid Parts, to be ſecreted and eliminated through numberleſs Emunctories and Strainers, is of a thickiſh Conſiſtence, and of various Colours and Taſtes. But the Lymph is that pellucid, inſipid, and pure Liquor, the *more ſubtile Part of which affords the Matter of the* Fluid of the Brain, Spinal Marrow, and Nerves, as, alſo, of the ſeminal Liquor. The gelatinous Parts of this Fluid nouriſh all the Solids of every kind, and its finer aqueous Parts are, through the lymphatic Veſſels, by means of the Valves, and conglobate Glands, again conveyed to the Heart; where, being again united with the ſweet aereo-elaſtic Parts of the Blood, and, as it were, animated afreſh, it is with it conveyed to all the Parts of the Body, for proper Uſes. Hence, when theſe Fluids recede from their natural State and Diſpoſition, they acquire a peculiar kind of Corruption; from which afterwards ariſes the different Genius of the Diſeaſe, the different Violence of the Symptoms, and the greater or leſs Danger.

That, in the white Purples, the Lymph is tainted with a kind of Acidity, is obvious from many Circumſtances; and eſpecially that a redundant Acid is contained in the Maſs of Blood and Lymph, we may know from the exceſſive Secretion of Serum, uſual, if not eſſential, to this Diſorder; for ſuch is the Force and Nature of an Acid, that, when it inſinuates itſelf into the Blood, it coagulates its thicker Parts, and produces a Secretion of Serum; we may know by which means profuſe Sweats are promoted, a copious Diſcharge of thin Urine occaſioned, a Salivation excited, or aqueous Stools brought on.

Having premiſed theſe things, we now come to inquire, why the white Purples are moſt incident, and generally fatal, to Child-bed Women. As, therefore, in general, all thoſe, whoſe Bodies contain a Redundance of lymphatic and aqueous Humours, as moſt Women do, are rather ſubject to an acid Vapeſcence, than a ſalino-ſulphureous Corruption of the Humours; for which Reaſon they are principally ſeized with the white Purples; and this is, in my Opinion, the true Cauſe of the Frequency of this Miliary Fever in Child-bed Women; for, in the Uterus of pregnant Women, both the Progreſs and Return of the Blood, by reaſon of its too great Congeſtion in that Part, and the Diſtention of the Veſſels, is very languid, ſlow, and difficult; hence, the Blood ſtagnating long there, the lymphatic Humour is copiouſly ſecreted into the Veſſels deſtined for its Conveyance; and, remaining, as it were, pent up in their Cavities and Windings, by its long Continuance becomes vapid, is corrupted, and contracts an Acidity, whilſt the more ſubtile ſpirituous Parts, the beſt Preſervers of the due Mixture of the Fluids, fly off. When, therefore, after the Birth of the Fœtus, the Uterus collapſes, and is contracted, whilſt the ſqualid lymphatic Humour, and feculent Blood, are not diſcharged and eliminated, on the third Day, generally, after the Labour, a febrile Motion happens; by which the peccant Lymph and Blood are repreſſed into the larger Veſſels, conveyed to the Heart; and thence, like a malignant Leaven, diffuſed through the whole Body in ſuch a manner, as to infect and contaminate the whole Maſs of Blood, Lymph, nutritive Juice, and nervous Fluid.

But if the Impurity and Dyſcraſy of the Blood and Serum is of the ſaline, acrid, and ſulphureous kind, the Symptoms are not ſo violent, but the Efflorescences are more chronical; the Face is inflated and high coloured; the Eyes are ſparkling; the itching Heat, and Senſe of Puncture, in the Skin, are greater; nor is the Patient afflicted with ſo great Inquietude, Anxiety, and Difficulty of breathing; which Circumſtances lay a Foundation for greater Hopes of Recovery. He may, alſo, be preſumed to be in a fair way, unleſs the white Purples ſucceed thoſe of the red Kind, or the red ſhould be changed into white, which frequently happens in conſequence of a bad Regimen, a prepoſterous Cure, or the Influence of violent Paſſions; whilſt the ſuperabundant Lymph is corrupted, and, at laſt, in the Fever, and hot inteſtine Motion of the Parts, the ſpirituous, fine, and ſulphureous Parts, fly off, leaving behind thoſe of a groſs, acrid, and vapid Nature.

Beſides, if we more narrowly conſider the Origin and Nature of that Matter, which produces Purples of a chronical and leſs dangerous Kind, we ſhall find, for ſeveral Reaſons, that it principally conſiſts of the ſalino-ſulphureous and acrid Particles of the Serum, which are not eliminated through the Emunctories, eſpecially the Skin, but remain in the Habit, and, by the hot inteſtine Motion, aſſume a worſe Quality. This is confirmed by Experience, becauſe the Purples of a chronical Kind generally ſeize thoſe, whoſe Bodies abound with impure Blood, ſuch as ſcorbutic Perſons; old People; Women whoſe Menſes are ſuppreſſed; Men whoſe uſual hæmorrhoidal Diſcharge is obſtructed; thoſe who are accuſtomed to a ſaline, vinous Diet, coarſe Malt Liquors, and ſmoking Tobacco; as, alſo, thoſe, who have looſe Habits of Body, and ſuch as lead too ſedentary Lives. Beſides, the Cauſe of this Diſorder is generally a ſudden Suppreſſion of Perſpiration; and, by that means, a Repulſion of the Sordes, either by a cold Air compreſſing the Pores, drinking too cold Liquors, or ſudden Frights. I have known Inſtances, in which Perſons overheated, and covered with a profuſe Sweat, have, after a Train of violent Symptoms, been ſeized with an Eruption of the Purples; many, alſo, upon expoſing their Bodies to cold Northerly Winds, after they have been overheated in Bed, by the Heat of the Sun in travelling, or that of dry Baths. The cold and tempeſtuous Conſtitution of the Atmoſphere long continuing, and obſtructing Perſpiration, is the Cauſe that the Purples *ſo frequently recur*, particularly after the Winter Solſtice, eſpecially in the Months of *January* and *February*. The ſurpriſing Influence of a cold and Northerly Wind, in intercepting and ſuppreſſing even the preternatural Excretions through the Skin, is, by a memorable Inſtance, confirmed by *Lazarus Riverius*, who, in *Obſ.* 53. informs us, that a certain Boy was afflicted with an Impetigo, which diſcharged an ichorous Matter; but that Northerly Winds coming on, this fetid Matter was ſuppreſſed, conveyed to the Lungs, and excited an Aſthma, which did not ceaſe till the Return of Southerly Winds.

But nothing more effectually diſcovers the ſalino-ſulphureous Subſtance, in the Purples of the chronical Kind, than that thoſe Medicines, which involve and correct the ſaline Spiculæ, ſuch as Whey, together with Goats and Aſſes Milk, mixed with the *Selteran* Waters, as, alſo, temperate Decoctions uſed for ordinary Drink, not only afford Relief, but, alſo, totally cure the Purples. Beſides, though this Species of Purples is free from Danger, yet, if it is treated with too much external Heat, internal heating, or volatile Medicines, in the ſame manner as in the Itch, ulcerous Puſtules, and other Defedations of the Skin, ariſing from a peccant and ſaline Diſpoſition of the Humours, the Heat, Pain, and Itching, are increaſed, and frequently a Thirſt and Fever excited; becauſe the Salts, being, by theſe means, rendered more acrid, inſinuate themſelves deeply into the ſmall Fibres of the Skin, which they lancinate and vellicate.

This chronical Exanthematous Diſorder is more uneaſy, and accompanied with a far greater Itching and Heat, than the white Purples mixed with the red; which can only be aſcribed to the ſaline and acrid Particles pricking the ſenſible Subſtance of the Skin. The ſaline Acrimony of the Humours is, alſo, evinced from this; that ſalutary, ſweet Waters, free from a ſaline Element, and a purgative Quality, ſuch as thoſe of *Lauchſtad*, when drank by thoſe afflicted with the habitual Purples, have rendered the Body remarkably ſoluble, procuring daily ſix or eight Stools, the Matter of which is ſo acrid, as to corrode the Anus; whilſt, a few Days after, the purgative Effect gradually ceaſes; nor, if next Year the Drinking theſe Waters is repeated, does the ſame purgative Effect follow. It is, alſo, to be obſerved, that, in the Purples, eſpecially of the obſtinate, chronical, and ſcorbutic Kind, after the Uſe of Milk, or temperate mineral Waters, I have, with great Succeſs, ordered a Bath of ſweet Rain-water, by the repeated Uſe of which all the Puncture, Heat, and Itching, of the Skin were removed, and the Efflorescences diſappeared; an infallible Proof, that, by correcting the Acrimony of the Humours within, and eliminating the acrid Recrements lodged under the Skin, through the Pores relaxed in the Bath, the Diſorder is removed, and the Patient cured.

We ſhall now ſpecify the Reaſons, why no Exanthematous Diſorder, when cured, ſo eaſily and frequently returns, as the red ſcorbutic Purples. This Effect, then, ſeems to be produced by two Cauſes: Firſt, becauſe, in this Diſorder, the Tone of the Skin is conſiderably injured and deſtroyed; and, ſecondly, becauſe the Subject and Seat of frequently returning Purples are the conglobate Glands; for as the Skin is an univerſal Emunctory to all the Humours, and of ſingular Uſe in the Preſervation of Health, ſo the Injuries done to the Conſtitution by any Diſorder in this Emunctory are certainly very great: But this Covering of the Body is eaſily injured by various Cauſes; ſince it is not only compoſed of the ſenſible Filaments of the Extremities of the Nerves, but is, alſo, totally tubulous and porous, becauſe the ſmall Mouths of the minute Arteries, which convey the ſubtile, exhalable Matter, terminate in it; for which Reaſon, both with reſpect to its Tubes and Pores, as, alſo, with reſpect to its Subſtance, it has not only a ſubtile Motion, and Tone of Dilatation and Conſtriction, but, alſo, an exquiſite Senſation. Hence, the greater the Senſibility of the Skin is, the more ſubject to Injuries it is, and the more eaſily its due Motion is perverted. It is, in a particular manner, eaſily altered and conſtricted by cold Northerly Winds,

Winds, and relaxed by moiſt warm Southerly Winds; ſo that it conſtitutes a true microcoſmical Hygrometer. External Cauſes, alſo, which hurt, prick, cut, or are poſſeſſed of a corroſive Acrimony, as, alſo, acrid Medicines, thoſe of a too heating Quality, and refrigerating, pinguious, and inſpiſſating Subſtances, are poſſeſſed of a ſingular Power, not only of impairing, but, alſo, of deſtroying, the Tone of this Integument. But when this Tone is changed and deſtroyed, the ſalutary Excretion of Perſpiration through the ſmall Orifices of this Strainer, muſt, at the ſame time, be greatly injured.

When, therefore, the vaſcular and fibrous Texture of the Skin is injured, and its Tone, by the Aſſiſtance of which the recrementitious Matter is eliminated by Exhalation, and laudable Juices reſtored, is deſtroyed, a bad Diſpoſition and Weakneſs are induced, and more firmly take Poſſeſſion of the Fibres; ſo that the impure Humours, eaſily conveyed thither, again act upon this weakened Part, and become ſtagnant. And certainly this preternatural Diſpoſition of the Skin to produce ſuch Stagnations, and the Difficulty of removing them, are ſufficiently obvious from the Gutta Roſacea, which, by injuring and depraving the tender and tubulous Texture of the Skin in the Face, by a copious Congeſtion of Ichor, is not to be cured, and totally extirpated, without great Difficulty. Hence, ſince, by a frequent Approach of the purpuraceous Matter to the Skin, its Tone, Motion, Strength, and tubular Texture, are greatly changed and corrupted, it is not to be wondered at, if, the excrementitious Matter being again there collected, the ſame Diſorder ſhould again happen, and an Efflorеſcence of the Purples be produced.

Having thus explained what ſeemed neceſſary to point out the material Cauſe of both Species of the Purples, we now come to conſider what Circumſtances contribute, in a more remote manner, to the Generation of theſe Diſorders. Firſt, then, the Purples, eſpecially of the chronical and protracted Kind, are moſt incident to thoſe, who abound more with Serum than Blood, ſuch as Infants, and Women of a ſpongious Habit, generally called *phlegmatic*; and the more the ſerous Humours diſcharged recede from their natural Purity, and mild Temperature, and the more ſordid they are, the more difficult is the Cure, and the more dubious the Succeſs, of the Diſeaſe.

It is, alſo, certain from Experience, that the Purples, both chronical and acute, as, alſo, malignant Miliary Fevers, are moſt incident to Women of weak and delicate Habits, to ſuch as have their Strength impaired by violent Paſſions, eſpecially long Grief, or by profuſe Hæmorrhages during Abortion, or an Exceſs of the menſtrual Diſcharge, or by a long-protracted previous Diſorder; for, in ſuch infirm and weak Habits, the lymphatic, mild, and nutritive Humours eaſily contract a foreign Nature and Taint, becauſe, in conſequence of the weakened Strength of the Solids, the Circulation of the Fluids is reſtored ſlower, and, the Secretions and Excretions being hindered, Crudities and Sordes are generated and accumulated in the Body.

But a Fever, accompanied with Miliary Purples, is principally incident, and often fatal, to Child-bed Women. This generally appears about the third Day after Labour, when the Milk Fever generally comes on; but it, alſo, ſometimes ſeizes on the ſeventh, and ſometimes on the fourteenth Day. In order to inveſtigate the Cauſes of this Diſorder, we are to overlook no Circumſtance which can lead us to underſtand its Origin and Generation. Now it is certain from Experience, that poor Countrywomen of robuſt Conſtitutions, and accuſtomed to Exerciſe, are not in Child-bed ſeized with this Fever, whereas rich, tender Women, addicted to a ſedentary Life, much Sleep, Luxury, and high Living, as, alſo, thoſe, who are of delicate Conſtitutions, and ſuch as are ſubject to tumultuous Paſſions and Commotions of Mind, are eaſily obnoxious to the Purples after Child-birth: And it ſeems to be true, that, as rich and eaſy Living, which, excluding hard and ſaline Aliments, conſiſts of light Aliments, farinaceous Subſtances, light Cakes, Sweetmeats, fermentable Subſtances, Summer Fruits, and palatable Meats and Drinks, as, alſo, an impure, vapid Air, impregnated with ſordid and putrid Exhalations, ariſing from adjacent Marſhes and Standing-water, together with the Impurity of the Water, contribute greatly to the Generation of all Diſeaſes, ſo they, in a particular manner, induce the Purples. From theſe Circumſtances we are to deduce the Reaſons, why this Diſorder rages ſo much at *Leipſic*, which is ſituated low; and, on account of the adjacent Marſhes, affected by an inſalutary Air, whilſt, at the ſame time, the Inhabitants live in a delicate and luxurious manner. For theſe Reaſons, alſo, in *England* this Diſorder firſt appeared in *London*, where the State of the Air, and the Method of Living, are the ſame; nor is it to be doubted, but that, elſewhere, Women, who live in the ſame manner, and in unhealthy Places, are frequently ſubject to this malignant Fever.

It is, alſo, obſervable, that pregnant Women, who are coſtive, uſe a ſedentary Life, and, neither in the middle nor laſt Months of their Geſtation, diminiſh the Plenitude of the Veſſels by Veneſection, are, when in Child-bed, in a very bad Condition, and generally afflicted with the Purples: For, ſince almoſt all pregnant Women contain a Redundance of Blood, and ſince, by reaſon of the Diſtention and Relaxation of the Tone of the Veſſels, the Circulation of the Blood and Humours is ſlow, and the Evacuation of the Sordes, by Secretion and Excretion, ſcanty, they ſucceſſively contract impure and peccant Humours; ſo, if improper Aliments are uſed, and the Elements neceſſary for the Support of Health, are peccant, a far greater Corruption is induced, inſinuates itſelf into the internal Parts, and afterwards proves prejudicial to Health, and ſometimes produces mortal Diſeaſes.

The Purples, eſpecially of the Miliary Kind, generally ſeize Child-bed Women, if, in the firſt Days after Labour, the Lochia are not duly diſcharged, but are either totally ſuppreſſed, flow too ſcantily, ſtop too ſlow, or are forthwith ſuppreſſed by a ſudden Fright, or the free Admiſſion of Cold; for, in pregnant Women, by means of the Redundance of Blood and Humours, the vaſcular and cellular Texture of the Uterus is ſurpriſingly diſtended and obſtructed by the Congeſtion of the Humours; ſo that the Blood circulates ſlowly and with Difficulty there; and, not being totally conſumed for the Nouriſhment of the Fœtus, ſtagnates in the uterine Veſſels, and becomes thick and feculent, till at laſt, the Fœtus being excluded, the Lochial Blood is diſcharged from the Veins, by which the Placenta adhered to the Uterus. If, therefore, from a peccant Quality of the Blood itſelf, or a Defect of natural Strength, the corrupted Lochial Blood is not ſufficiently evacuated, but, by an inverted Motion, paſſes into the larger Veſſels, and is conveyed into the nobler Viſcera, ſuch as the Heart, Lungs, and Brain, it is not to be wonder'd at, that Fevers accompanied with a great Impurity and Corruption of the Serum, ſuch as the Purples are, and other violent Symptoms complicated with them, ſhould, by theſe means, be produc'd.

Beſides, 'tis conſtantly obſerv'd in Practice, that Women, in conſequence of an Obſtruction of their Menſes, are far more ſeverely and frequently afflicted with Purples, both of the acute and chronical Kind, than Men; for the Uterus may be juſtly accounted the Source of this Diſorder, ſince according to *Democritus*, in *Ep. de Nat. Hum. ad Hippocrat.* that Part is the Source of a thouſand Woes to Woman; and the Purples rarely happen to Women, if their menſtrual Diſcharge is regular, ſufficient in Quantity, and continued for a due time; but, if otherwiſe, they are frequently afflicted with this Diſorder. Hence 'tis certain from Experience, that Women who from advanced Age, or any other Cauſe, have their Menſes totally ſuppreſs'd, labour under this Diſorder longer than other Patients. Beſides, if in young Women the Menſes are not regular, or diſcharg'd too ſcantily, eſpecially if other Cauſes concur, the Purples, accompanied with a Variety of Symptoms, are generally produc'd.

'Tis, alſo, certain from Experience, that Women ſubject to the Fluor Albus, when that Evacuation is too ſmall, or check'd, or totally ſuppreſs'd, by improper Meaſures, have been ſeiz'd with the Purples; and, when theſe have been cur'd, the Fluor Albus has again appear'd; and, when this has been remov'd, the Purples have again ſucceeded. Hence 'tis ſufficiently obvious, that this Exanthematous Diſorder is the Off-ſpring of the Serum. Nor is it to be wonder'd at, if at preſent, when the Fluor Albus is more common than in former Ages, the Purples ſhould, alſo, for that Reaſon be more frequent.

Though the immoderate Redundance of Blood in thoſe in whom it is not leſſened by the menſtrual or hæmorrhoidal Diſcharge, or by ſtated Veneſections, greatly contributes to the Generation, eſpecially, of the chronical Purples; yet the Impurity of a copious Serum, ariſing from the Penury of laudable Blood, contributes ſtill more to the Production of the ſame Diſorder. It is, alſo, frequently obſerved, that by imprudent Veneſection, or immoderate Hæmorrhages, in conſequence of Abortion, eſpecially with the Concurrence of a violent Fright, or Anger, Refrigerations of the Extremities, Deliquiums, Inflations of the Stomach accompanied with Anxiety, an Oppreſſion of the Breaſt, and an alternate Senſe of Heat and Cold in the Surface of the Body, have been produced; which Symptoms, upon the Appearance of the Purples on the third or fourth Day, are mitigated, and allayed: For nothing more effectually deſtroys the Tone, Force, and Strength of the Solids, or has a more immediate Tendency to bring on a virulent Quality of the Fluids, already impure, than tumultuous Commotions of Mind, eſpecially long-protracted Sorrow, and Grief. Hence, if pregnant Women, hyſteric Patients, or thoſe labouring under Irregularities of the Menſes, are afflicted with violent Grief, it is a pretty ſure Sign, that they will, in Child-bed, be ſeized with Purples of a bad Kind: Beſides, Purples of a mild and benign Nature, in weak Habits, and ſuch as are often under the Influence of enormous Paſſions, eaſily acquire a great Degree of Malignity, and portend the greateſt Danger; and it is certain from Experience, that ſtudious Men, and thoſe addicted to a ſedentary Life, after obſtinate Grief, have contracted the Purples, and ſtruggled under that Diſorder for a long time.

A bad State of the Air, the Uſe of which is continually neceſſary to Life, and an irregular Conſtitution of the Weather, contribute greatly to the Production of the Purples; for as the Influence of the Air is very great, in perverting the State and

Crasis of the subtile, nervous, and membranous Fluids, and all the other Juices; so it is, also, of great Efficacy, in modifying and altering the Tone of the Skin, and the salutary Excretion of Perspiration: So that it is not to be doubted, but epidemical Diseases, and Purples, more or less malignant, are produced by the Impurity of the Air. Thus, some Years ago, the Purples, accompanied with a catarrhous Fever, raged epidemically, especially among the Children of the *Lower Saxony*; and this Disorder derived its Origin from a previous, long-continued, cloudy, and rainy State of the Weather, succeeded by cold easterly and northerly Winds; as we are informed by *Boettigerus*, in his *Dissert. de Purpura rubra epidemica.* In *Miscellan. Nat. Curios. Dec.* 1. *An.* 6. we are told, that, in the Spring succeeding an open and cloudy Winter, a malignant Purple Fever arose, which, through the whole Spring, had its epidemical Circuits, and was principally incident and fatal to Children. An impure Air, impregnated with foreign and active Exhalations, is, also, the Cause why this Disorder is not only more easily generated, but, also, more obstinately supported, in some Places, than in others. Thus, in large Towns, where the Air is impure, Persons seized with the Purples are often cured by removing to more salutary Places; and again afflicted with the same Disorder, upon their Return to such Towns, and staying in them for some time. Hence the Reason is to be deduced, why the Months of *March* and *April* so much favour the Production of catarrhous, exanthematous, and purple Fevers; for during these Months the Weather is generally heavy, rough, and changeable, whilst the Atmosphere is impregnated and contaminated with noxious Exhalations, arising from the Rains, and melted Snow.

We have already considered the principal Causes, which, especially in chronical Purples, have a great Affinity with those which generate the Scurvy; for, in this last-mentioned Disorder, there is an acrid, saline, and sulphureous Dyscrasy of the Blood, which, in the Purples, is only more exalted, and subtile. The Generation of the Purples is promoted by a lax Habit of Body, long Disorders of Mind, Obstructions of the natural Secretions and Excretions, a vapid Intemperature of the Air, moist and low-situated Places, improper Aliments, and those of hard Digestion, a Defect or a Redundance of Blood, and other Things of a like Nature. Hence a difficult Question arises, which is, Why, tho' all the Circumstances requisite to the Production of the Purples were present, this Disorder only began lately to appear. In deciding this perplexing Question, it must necessarily be acknowledged, that the same Disorder must have the same common Cause: Now we have already shewn, that in the Purples, especially of the chronical Kind, there is an impure, saline, and excrementitious Serum; that in the miliary Purples there is a Redundance of putrid, vapid, and acrid Serum; and that this Matter, contained in the Blood, whether acid, or acrid and saline, by the hot intestine Motion, acquires a worse Nature, so as violently to affect and irritate the nervous Parts, and, at last, to produce this Exanthematous Fever, accompanied with violent Symptoms. We must, therefore, direct our Views to other Circumstances, and consider whether, in Diet and Regimen, which afford the Matter, Temperature, and Intemperature, of the vital Humours, there is not some Error, which about forty, and some more Years ago, was unknown, or, at least, not so universally practised. This Error, therefore, is the almost universal Use, or rather Abuse, of warm Liquors, and especially of Coffee and Tea; for in some Parts, especially in *Germany* and *England*, Women of all Conditions use this Liquor, both in the Morning and Afternoon; and think it unpolite to send their Neighbours away without drinking large Quantities of it: And it is observable, that the Purples reign and increase most, since the drinking of these Liquors became so customary, and especially in those Places where it is most frequently used.

Though this Observation is so supported by Experience, that it cannot be doubted; yet its Truth may possibly seem to be weakened by this, that though in the hot *Asiatic* Countries Coffee is much used, the Purples are yet unknown in those Climates. But this seemingly specious Objection falls to the Ground, if we carefully consider, that in these Places the Regimen is quite different from what it is in ours; that their Inhabitants do not use coarse, hard, and salted Aliments; that the Air is purer and hotter, and Perspiration more copiously and expeditiously carried on; and, which is of all other Circumstances of the greatest Importance, that the Inhabitants have no scorbutic Taint in their Blood; for that a scorbutic and impure State of the Humours is to be class'd among the Causes which contribute to the Generation of the Purples, is sufficiently obvious from this, that the Purples rage most in Places most infested with the Scurvy, such as *England*, *Holland*, *Sweden*, and *Germany*: Hence the Disorder is called the scorbutic habitual Purples. It is, also, observable, that where the Purples already rage, and afflict the Inhabitants, the scorbutic lacerating Pains of the Limbs, the malignant Ulcers, the putrid and bloody Gums, the broad and livid Spots, which are the essential and peculiar Symptoms of a Scurvy, are rarely afterwards observed; or, at least, they are less frequent and violent, as we shall afterwards shew.

As, therefore, these Things which happen in other Climates, under another Regimen and Constitution of Body, cannot be transferred and accommodated to the Situation of *Europeans*; so this Subject will be more perspicuous, if, from this Source, we explain the Method in which the Purples are generated. Now it is sufficiently known, that the excrementitious Impurities of all Kinds, separated from the Blood and Humours, especially the bilious Sordes, and the fermentable Juice of a salival Nature, supplied from the pancreatic Glands, as, also, the mucid Humours secreted from the Blood, principally in the large Intestines, fall down into the Intestines: It is, also, certain, that in this winding Canal Feculences are produced, from Aliments of various Kinds, such as improper Acids, fermentable and half-corrupted Substances, and Fish; and that these Feculences, when mixed and collected, ought to be discharged by Stool, as unfriendly and prejudicial to the vital Fluids. Whatever Things, therefore, hinder the Discharge of these Sordes, and occasion their again entering the Mass of Blood, certainly greatly contribute to render the Blood impure, by conveying into it these Sordes, which may be along with it propelled to the Emunctory of the Skin; tho' they cannot, like the Matter of the Sweat, be quickly dissipated; but, on account of their acrid Nature, destroy the sensible Skin, and, lodging there, form Spots, or Pustules: For it is daily observed, that if cachectic and scorbutic Patients are costive, Pustules, a Gutta rosacea, and ulcerous Defedations of the Skin, are produced. It is, also, observable, that, in acute and burning Fevers, Costiveness is succeeded by the Purples; whereas those who in the Decline of such Fevers have a critical Flux, are not seized with this fatal Exanthematous Disorder.

Now, upon an accurate Inquiry, we find it confirm'd, by Experience, that all warm Liquors, Tea, as well as Coffee, by increasing Perspiration, and provoking Sweat, render most Persons costive; and that violent Fluxes are stopped by Sudorifics, exhibited with a proper Regimen, and drinking some warm Infusion. Hence, if Persons whose *Primæ Viæ* are loaded with Impurities and Crudities, which ought to be eliminated by Stool, frequently use large Quantities of Coffee or Tea, it is not to be wonder'd at, if the bilious, saline, and sulphureous Sordes, being attenuated by the Heat, and afresh dissolved with an aqueous Liquor, should return through the lacteal and lymphatic Vessels, which every-where occur in the large Intestines, to the Mass of Blood, where, by reason of their Continuance and Commixture, acquiring a worse Nature, they induce a foreign and hurtful Intemperature of all the Fluids; unless, by covering the Body well, or by the Advantages of a warm and temperate Atmosphere, they are duly and quickly eliminated by Perspiration. Hence we infer, that all Persons, whether Men or Women, who are costive, and drink these warm Liquors, especially Coffee, whilst the Skin, at the same time, does not duly transmit the Sordes, receive great Injury from such Liquors; since, in such a Case, they greatly dispose to the Generation of the Purples, especially if there is a previous scorbutic Disposition of the Humours; or if the Patient is under the Influence of violent Passions, especially long-protracted Sorrow and Anger, which greatly favour the Accumulation of bilious Sordes in the *Primæ Viæ*. On the contrary, these Liquors are not only harmless, but salutary, to those whose Bodies they render soluble, and who are disposed to Perspiration; for, in such Persons, they contribute to the Elimination of Sordes of various Kinds.

Besides, Coffee-berries, the Product of another Climate, contain something of a foreign Quality, unfriendly to the natural Temperature and mild Mixture of the Blood in our Parts of the World; and in burning these Berries, especially in a strong manner, which is usual, they contract something of a saline, volatile, and empyreumatic Sulphur, which is unfriendly to the Tone and Motion of the nervous Parts. Hence it happens, that in some the drinking of Coffee produces a Tremor of the Hands, and Anxiety; and these Effects are produced the more, the more the Water is inspissated by the Powder of the Berries much burnt. Besides, in this Liquor much Sugar is used, which, lodging in the Intestines, and not finding an immediate Discharge by Stool, ferments, and increases the mucous and acid Crudities. From what has been said, it is not to be wondered at, if, by the common Abuse of Coffee, the natural Mixture and Crasis of the constituent Parts of the Blood are greatly changed, and a foreign State of the Fluids induced; which, being conveyed to the Infants in the Uterus, along with the Blood, lays a Foundation for the Purples.

Though this Doctrine, with respect to the Origin of the Purples, seems to be overthrown by an Assertion of *Welschius*, in *Dissert. de Purpura Lipsi.* that this Disorder was known at

Lipsic

Leipſic above ſixty Years ago, when the drinking Tea and Coffee was not uſed; yet it will be found not to be ſubverted by this means, when we aſſert, that warm Liquors, eſpecially Coffee, do not concur materially, but rather formally, to the Generation of the Purples; whilſt, by the frequent Uſe of ſuch warm Liquors, the Impurities of the Primæ Viæ, in conſequence of the Patient being rendered coſtive, inſinuate themſelves into the Blood. Beſides, if we carefully attend to the Living, Diet, and Regimen, uſed by pregnant and Child-bed Women at *Leipſic*, at the Time this Diſorder appear'd, we ſhall find, that it proceeded from the Cauſe aſſign'd; for it is certain, that the Women of that Town are much addicted to Pleaſure, lead an idle Life, indulge themſelves in ſleeping long, and almoſt daily uſe Sweetmeats, Summer Fruits, and farinaceous Subſtances, fried with Butter and Sugar; in conſequence of which, they are coſtive, and, during their Pregnancy, collect a Redundance of Impurities: For which Reaſon they are frequently afflicted with the Fluor Albus. It was at that Time, alſo, cuſtomary, not only to confine Child-bed Women cloſely to Bed, but, alſo, as it were, to macerate them in warm Rooms; and, during the firſt Days of Child-bed, to exhibit only boiling-hot Broths, and Drinks; whilſt they did not venture to remove the coſtive State of the Patient, by a Clyſter, or Laxative; nor to uſe Veneſection upon a Suppreſſion of the Lochia. Any one who duly conſiders theſe Things, and compares them with what has been already ſaid, muſt readily perceive, that ſuch Management was the Cauſe why, at *Leipſic*, this Exanthematous Diſorder appear'd before the Uſe of Coffee. This was, alſo, afterwards confirm'd by Experience; for after they diſcarded the hot Regimen, with reſpect to Child-bed Women, and admitted the Uſe of Laxatives and Veneſection, the Purples became far leſs frequent, leſs dangerous and fatal. Though, therefore, the Uſe of Coffee cannot be accuſed of generating the Purples in *Leipſic*; yet it cannot be denied, that the Purples, which for a Tract of Years were confined to that Town, upon the Introduction of Coffee appeared elſewhere: So that the more this Liquor was uſed, the more this Diſorder raged, and ſpread itſelf; and, which was a ſingular Circumſtance not before obſerv'd, it generally aſſociated itſelf with acute Fevers.

Theſe Things are ſufficient to demonſtrate, that warm Liquors contribute to the Generation of the Purples, or the Converſion of the Scurvy into the Purples. But this Doctrine will be farther illuſtrated by the following Obſervation: The City of *Hall*, in *Germany*, both on account of its low Situation, and the adjacent ſtagnant and ſaline Waters, which emit large Quantities of aqueous Vapours, is ſurrounded with a moiſt Atmoſphere; for which Reaſon it appears all beſet with Clouds, to a Perſon who views it at a Diſtance. Hence the Reaſon is to be deduced, why, from the remoteſt Times, the Scurvy has raged in this City, ſo that the Inhabitants are frequently afflicted with the wandering Gout which they call ſcorbutic, Colics, Tumors, and ſcorbutic Spots; together with other Symptoms peculiar to the Scurvy; eſpecially the various Diſorders of the Gums. This I learned, when young, partly from my Father, and partly from other Phyſicians of that Town, who hardly preſcribed any Medicine in which there was not ſome antiſcorbutic Ingredient. And I myſelf, in my future Practice, obſerved the ſame Method with thoſe who committed themſelves to my Care, whoſe Diſorders, on account of a ſcorbutic State of the Humours, I happily removed by Antiſcorbutics. But, as ſoon as the Inhabitants began to uſe warm Liquors, eſpecially Coffee, the Scurvy diſappeared, and the Purples, both of the malignant and benign chronical Kind, began to rage, and proved very fatal at firſt, when the Nature of the Diſorder was unknown. The ſame Effects were afterwards produced, by the ſame Cauſes, in *Eaſt Friſeland*; ſo that it is not to be doubted but the Scurvy lays a Foundation for the Purples.

The Scurvy is, alſo, frequently converted into the Purples, by means of a Regimen, or particular Choice of Aliments, which our Forefathers uſed, either not at all, or but moderately; for in our Days moſt Men, addicted to Idleneſs and Luxury, think of nothing but gratifying their Palates by Variety of new-invented Diſhes: Beſides, not content with the various Products of their own Country, they are fooliſhly fond of Subſtances brought, through dangerous Seas, from the remoteſt Parts of the *Indies*. Though I do not abſolutely condemn exotic Aliments, yet I muſt find fault with the modern Taſte, which reliſhes none but ſomewhat acid and gently-pungent Food; which muſt, conſequently, be prepared with large Quantities of Salt, Aromatics, Garlick, Onions, Pepper, and the various Kinds of Funguſes: For ſuch Aliments, by imparting a grateful Acrimony to the Tongue, partly make Perſons eat too liberally, and, by that means, produce a Redundance of Crudities in the *Primæ Viæ*, juſt as ſcorbutic Perſons do, by the Uſe of coarſe Aliments; and partly procure a greater Effervescence of the Blood; which greatly contribute to the copious Generation of ſaline and ſulphureous Particles: So that, with the Concurrence of other Cauſes, the Purples are eaſily produced. Beſides, the Uſe of ſpirituous Wines is at preſent ſo frequent, that in ſome almoſt the whole Maſs of Blood is, as it were, converted into Wine.

To this Luxury in eating and drinking it is to be aſcribed, that various Hæmorrhages, eſpecially the hæmorrhoidal Diſcharge, are ſo familiar to many. Hence ſome Phyſicians, being miſled, derive the Origin of all chronical Diſeaſes in Women from an undue Diſcharge of the Menſes; and in Men, from a Suppreſſion of the Hæmorrhoids: For which Reaſon, if ſuch Diſorders happen, they order the whole Intention of Cure to be directed to reduce theſe Evacuations to due Order; and, particularly, frequently, or even every other Day, exhibit Pills made after the manner of the *Pilulæ Becherianæ*, with a ſmall Quantity of Aloes. But though this Hypotheſis is leſs agreeable to Truth, yet I ſhall not heſitate to affirm, that the frequent Uſe of theſe Pills, in other reſpects ſafe enough, in ſome Perſons greatly contributes to the Generation of the Purples; for if there is no natural Propenſity to any Excretion of Blood, eſpecially by the hæmorrhoidal Veins, it muſt neceſſarily happen, that by theſe means the Maſs of Blood muſt be exagitated, and thrown into Commotions, and, by an Increaſe of the inteſtine Motion, a greater Quantity of ſaline and ſulphureous Particles produced, which are the material Cauſe of the Purples: Soon after, all the Circumſtances concur which accumulate the ſaline and ſulphureous Parts of the Blood, render them more acrid, and fix them deeper in the Fibrils of the Skin. Hence it is not to be wondered at, that the Scurvy, which is a ſaline Diſorder, changing its Nature, ſhould degenerate into another Diſeaſe, ſuch as the Purples.

Though we have intermixed the Prognoſtics of both Species of the Purples with the Hiſtory of the Diſeaſe; yet we ſhall ſubjoin ſome Things with reſpect to the chronical Purples. Since, then, this Diſorder is not accompanied with a Fever, it is not dangerous, unleſs when cured in a prepoſterous manner: It is, however, an obſtinate Diſorder, and generally creates great Trouble both to the Patient, and the Phyſician; for if the Fomes of the Purples fixes its Seat in the ſolid or internal Parts, it does not eaſily quit the Body, but, remaining within, generates violent Diſorders; if, on the contrary, it is too impetuouſly expelled, it produces no leſs terrible Misfortunes. But this principally happens to thoſe who have weak nervous Syſtems; or who, in conſequence of an unequable Circulation of the Blood and Humours, are diſpoſed to ſpaſmodic Strictures; by which it happens, that a Redundance of impure Blood is with Impetuoſity and Danger congeſted ſometimes in the Head, ſometimes in the Breaſt, and at other times in the Joints; by which means, a Train of violent Symptoms is excited: For if the Matter of the Purples retained in the Habit is conveyed to the Head, it produces Cephalalgias, Ringing of the Ears, Weakneſs of Memory, an Aphony, and ſometimes Madneſs, apoplectic Fits, and Lethargies. If it is conveyed to the ſenſible Membranes of the Lungs and Diaphragm, it produces ſpaſmodic Aſthmas, and pungent lancinating Pains of the Breaſt. If it is depoſited on the Membranes of the Stomach, Anxieties of the Præcordia, and Cardialgias, ariſe: If it ſeizes the Inteſtines, it produces Gripes, and Inflations of the Hypochondria, accompanied with an uneaſy Senſation of Heat: If it is lodged in the Joints, they are diſtorted by cruel and lancinating Contractions: And, laſtly, if the malignant Matter acts upon the tendinous and nervous Ligaments of the Hip, iſchiadic Pains are produced. But all theſe cruel Symptoms lay aſide their Virulence, and become milder, when the acrid cauſtic Matter is expelled to the Surface of the Body.

The Method of Cure.

For preventing a Return of the Purples, whether of the chronical, or of the acute and miliary Kind, nothing is more effectual, than Abſtinence from all kinds of Malt Liquors, which are improper in this Diſorder; ſince all of them, when old, contract an Acidity, and become too ſpirituous; and, when recent, are not only feculent and fermentative, but, alſo, contain coarſe and mucid nutritive Parts: But all ſuch Subſtances are ſo far from promoting, that they rather obſtruct the Depuration of the Blood and Lymph, on which, however, the Whole, both of the Prevention, and of the Cure, depends. Hence, in hot and Summer Weather, I adviſe the Uſe of temperate mineral Waters, ſuch as the *Selteran* Springs, and thoſe of *Wildungen*, mixed with a ſmall Quantity of Wine; but in the Winter, and to ſuch Perſons as could not procure ſuch medicinal Waters, I have ordered, for common Drink, either pure Spring-water, or Decoctions of the Roots of Vipers-graſs, Sarſaparilla and Succory, Shavings of Hartſhorn, and clean Barley, with the Addition of a few Fennel-ſeeds; taking a Pint of Water for every Ounce of the Ingredients, adding a little Wine, if the Patient's Situation can afford it. I have, alſo, on account

count of Cuſtom, permitted the Uſe of ſmall and well-defecated Beer, in ſome Caſes.

In Purples of the Chronical Kind, I order Exerciſe, Travelling, and Change of Air, by removing from low to higher Places, Diverſion, and Tranquillity of Mind, a Freedom from Care, and profound Meditations: I, alſo, prohibit the Uſe of all ſuch Things as render the Patient coſtive, obſtruct Perſpiration, and generate a Redundance of Blood. Nor is the Patient liberally to uſe Fleſh, eſpecially Pork; nor Aliments highly peppered, or prepared with aromatic Subſtances. In the Summer Months I have ordered the Cure to be totally performed by Aſſes Milk alone, or Whey of Cows, or Goats Milk, or by the *Selteran* Waters, mixed with a third Part of Cows or Goats Milk, and drank for a Month, or ſix Weeks, interpoſing, now-and-then, a Bath of ſweet Water, or of the *Lauchſtad* Springs. And this Method, if the Diſorder has been deep-rooted, I have ordered to be perſiſted in for three Years. In ſome Men, of corpulent Habits, I have, alſo, ordered the Uſe of the *Sedlitz* Waters; by a moderate Draught of which, for ſeven or eight Days, in the Spring and Autumn, the Fomes of the Diſeaſe has been carried off by Stool. I have, alſo, ordered many, afflicted with chronical, ſcorbutic, and habitual Purples, to drink the Waters of *Lauchſtad*, by which the Sordes were copiouſly eliminated, the Patient continuing the Uſe of them, till their purgative Effects ceaſed.

When the Chronical Purples have been produced by a Diſorder of the Uterus, and an irregular Diſcharge of the Menſes, my principal Intention has been, to reſtore theſe to their natural State; for which Purpoſe, beſides the Meaſures already preſcribed, I have ordered the Powder of Rhubarb, the Elixir viſcerale, and waſhing of the Feet, to be daily uſed, a few Days before the menſtrual Eruption. But if, as it generally happens, they are accompanied with ſpaſmodic Strictures, an Inflation of the Stomach, Anxieties of the Præcordia, and Pains of the Back, I have uſed Antiſpaſmodics; ſuch as the *Pulvis Marchionis*, mixed with a little Nitre and Cinnabar, a Grain or two of Caſtor, and of the Extract of Saffron: This Intention is, alſo, anſwered by the anodyne mineral Liquor, mixed with the Eſſences of Caſtor and Saffron, and the bezoardic Liquor. The Patient muſt, alſo, uſe Baths of ſweet Water and Milk. In order to provoke the Menſes, I have ordered weak Eſſence of Amber, extracted with an alcaline Liquor, by which means the Diſorder was removed. In order to prevent the chronical Purples in plethoric Perſons not ſubject to the Hæmorrhoids, Scarifications and Veneſections are of great Efficacy for diminiſhing the Redundance of Blood; as, alſo, repeated Purgings, which may be moſt commodiouſly obtained by a Solution of Manna, which is in a peculiar manner adapted to Diſeaſes ariſing from a ſaline Acrimony, adding to the Solution a ſaline Stimulus; ſuch as the *Terra foliata Tartari*. The Night-ſweats, alſo, with which thoſe diſpoſed to the Purples are often much infeſted, I have happily removed, by frequent Purgings, brought on by gentle Laxatives; ſuch as Raiſins, Rhubarb, the *Terra foliata Tartari*, and Cream of Tartar.

In the Cure of the chronical Purples, I order, that from the very Beginning of the Diſorder the Patient ſhould not be kept in too hot a Bed, or Room, but in a moderate Heat, lying as little in Bed as poſſible; by which means, I have found the troubleſome Sweats prevented. Beſides the above-mentioned Decoction for ordinary Drink, I have found no Medicine produce better Effects than a diaphoretic nervous Powder prepared of Hartſhorn, both calcined and not calcined, Crabs-eyes, Mother of Pearl, Amber, purified Nitre, and Cinnabar. I have, alſo, obſerved excellent Effects produced by the anodyne mineral Liquor; ſo that by theſe two Medicines, exhibited in proper Doſes, either in Conjunction, or ſeparately, without the Uſe of any other Remedy, I have happily cured Purples, both of the acute and chronical Kind.

We now proceed to the Method of preventing and curing that bad Species of Purples generally incident to Child-bed Women in the Beginning, or about the Middle, of their lying-in. The Cauſe and Origin of this we have already derived from the improper Regimen of pregnant Women, and Errors committed with reſpect to their Diet; for which Reaſon theſe are carefully to be guarded againſt. In order, therefore, to prevent the Purples in Child-bed Women, the firſt Intention to be purſued is, to take care, that, during Pregnancy, a Redundance of Humours, and much more an Impurity of them from their Stagnation about the Uterus, be prevented, and no Weakneſs induced on the nervous Syſtem. This Effect, if the Body is turgid with Blood, can in no manner be better obtain'd, than by Veneſection three or four times, though not very copiouſly, performed in the ſuperior Parts of the Body. The Patient muſt, alſo, abſtain from Idleneſs, long Sleep, Commotions of Mind, Sweetmeats, fermentable and farinaceous Aliments; but ſhe is to uſe Aliments of a laudable Juice, and a pretty large Quantity of ſome ſalutary Drink: She is, alſo, to uſe moderate Exerciſe, and keep her Body ſoluble, rather by Aliments, than Medicines; exhibiting Raiſins impregnated with Rhubarb, and prepared with or without Manna; for theſe are of ſingular Service to pregnant Women. And ſince Refrigerations of the Lower Belly are conſiderably troubleſome to pregnant Women, and have a Tendency to generate violent Diſorders, I always adviſe them to fortify their inferior Parts againſt the Cold; and, for that Purpoſe, to wear Drawers. In order, alſo, to prevent noxious Stagnations of the Humours about the Uterus, it is expedient, ſometimes, eſpecially after the middle of Geſtation, to anoint and rub the Abdomen, before a warm Fire, with the *Balſamum Embryonum*, or with old generous *Hungarian* or *Rheniſh* Wine, made hot, dropping a few Drops of the Balſam of Life into it: And theſe Meaſures are carefully to be taken during Geſtation.

We ſhall now inquire, what Meaſures are to be taken before and after the Labour, and during the firſt Days of lying-in, in order to hinder Women from falling into violent Diſorders, and the Purples, both of the acute and chronical Kind. As, therefore, this Diſorder is eaſily produced, and Women weakened, by the imprudent Management of Midwives, who before the due Time ſolicit the Pains, and for that Purpoſe exhibit hot and ſpirituous Subſtances, I injoin great Moderation, with reſpect to every thing, leſt the Strength ſhould be impair'd, the whole Maſs of Humours ſurpriſingly exagitated by the violent Pains, and the Uſe of Analeptics, and the feculent impure Humours about the Uterus put into a more violent Motion; but the Diſcharge of the Lochia, and other Excretions, are to be duly promoted, that the Diſpoſition to Diſeaſes may be as little as poſſible.

The ſecond Day after the Delivery, when all the Pains are over, it is neceſſary the impure Blood, collected in the Uterus during Geſtation, ſhould be evacuated, and the vital Juices freed from the Cacochymy they have contracted. Hence the Excretions of all Kinds, eſpecially thoſe by Stool and Perſpiration, are gradually, but not impetuouſly, to be promoted, and carried on; which may be moſt commodiouſly done by the following means: Let the Patient carefully avoid the exceſſive Heat, either of the Bed, or Fire; and let her Drink be neither too hot, nor cold, but tepid. Let her guard againſt all Commotions of Mind, eſpecially Dread and Sorrow; let her, alſo, every other Day, for four times, take balſamic corroborative Pills; ſuch as thoſe of *Becher* or *Stahl*; for theſe not only evacuate the Sordes by Stool, but, alſo, provoke a Diſcharge of the Lochia, and bring on a Diaphoreſis. But if, at the Beginning, all the Symptoms are not allayed, but a Quickneſs of the Pulſe, and an external Heat, are perceived, theſe Pills may be mixed with a precipitating abſorbent Powder, which, for a Doſe, may contain four or five Grains of Nitre. In ſuch a Situation it is, alſo, expedient, in weak Broth, to take ſuch Medicines as allay the Spaſms, reſolve the grumous coagulated Blood, and procure a free Diſſipation of the Sordes by Perſpiration; which Intentions are excellently anſwered by Sperma Ceti, Oil of Sweet Almonds, Infuſions of Elder-flowers, Chamomile-flowers, and the Tops of Yarrow, a temperate Eſſence of Orange-peel mixed with Eſſence of Saffron, the anodyne mineral Liquor, and the bezoardic diaphoretic Powders, to be exhibited in ſome analeptic Water. A Mixture, alſo, of the analeptic and pectoral Waters, prepared with diſtilled Vinegar, Crabs-eyes, and Syrup of Sorrel, is of ſingular Service, in reſolving the grumous and ſtagnant Blood.

By a due Obſervation of theſe Cautions, no mortal Diſeaſe will readily attack Child-bed Women, nor are the Purples to be dreaded: But if, in conſequence of a Neglect of theſe Rules, the Corruption of the Serum and Lymph is ſo increaſed, as to diſpoſe to the Purples, whether of the red or white Kind, or if theſe Diſorders are already preſent, I uſe the following Method, which I have often found ſucceſsful. After injoining an equal and temperate Regimen, with reſpect to Heat, I order Child-bed Women, ſeized with the Purples, to uſe Water-gruel, with or without an Infuſion of common Chamomile; and this I have found of very great Efficacy. In the malignant and white Purples, I do not render the Body ſoluble by ſtimulating Medicines; nor is it expedient to produce that Effect by Clyſters. I, alſo, forbid, as much as poſſible, all Change of Apparel and Bed-cloaths; but rather adviſe, that ſuch as are already uſed, be put on, after having been well dried, and warmed before a Fire. I, alſo, diſſuade an erect Poſture, or Riſing out of Bed; becauſe, by theſe means, the Patients eaſily fall into Deliquiums; and, the Motion of the Humours being directed to the internal Parts, the Efflorеſcences diſappear, and the moſt terrible Symptoms are brought on, as is ſhewn in *Fred. Hoffmanni Diſſert. de Situ erecto in Morbis periculoſis valde noxio.*

After the Eruption, I exhibit, at different times, about a Scruple, or half a Dram, of the temperate bezoardic Powders, to which I ſometimes add, a ſmall Quantity of Saffron, or Caſtor, interpoſing now-and-then a Doſe of the anodyne

mineral Liquor, which is of ſingular Efficacy in allaying Spaſms, quelling the hot inteſtine Motion, and correcting the Acrimony of the Humours: But, if, for various previous Cauſes, the Retroceſſion of the Purples is to be dreaded, or has already happened, I mix with the anodyne mineral Liquor, a fourth Part of the bezoardic Liquor, prepared according to the Directions of *Buſſius*, and deſcribed in under the Article BUSSIUS: Which Mixture excellently promotes a Diaphoreſis, and forces the peccant Matter to the Surface of the Body. For reſtoring the Strength, which, in the White Purples, is greatly impaired, I recommend an analeptic Potion, prepared of the Waters of Baum, Citron-peel, the Flowers of Lilies of the Valley, Primroſes, *Egyptian* Thorn, and Cinnamon. This Potion muſt be impregnated with Juice of Quinces, adding a ſufficient Quantity of Mother of Pearl, and Pearl-ſugar, dropping into it a few Drops of the *Spiritus Nitri dulcis*. In this Mixture, as a proper Vehicle, the Powders may be exhibited, or a Spoonful of it may be frequently taken by itſelf.

As it often happens, that in the Milk, or Purple Fever, the Lochia are ſuppreſſed, and, in conſequence of a Congeſtion of Blood to the Head, mortal Symptoms produced, it is a Queſtion whether, if the Lochia are totally ſuppreſſed, or not ſufficiently diſcharged, if a Fever is preſent, and if the Purples are apprehended, Veneſection may be ſafely and uſefully uſed. In *Fred. Hoffman. Diſſert. de Venæſectionis prudenti Adminiſtrat.* 'tis ſhewn, that Veneſection is ſometimes highly beneficial in Exanthematous Fevers, even when the Efflorescences appear; and I can affirm, that by Veneſection alone, proportioned to the Circumſtances of the Patient, and performed either in the Foot or Arm, Child-bed Women at the very Gates of Death, and labouring under ſpaſmodic Strictures, by which the Blood is impetuouſly forced to the Heart and Brain, have not only been preſerved, but, alſo, received ſpeedy Relief. Hence, if Child-bed Women die of a Suppreſſion of the Lochia, we may juſtly aſcribe the Cauſe of their Death to a Neglect of Veneſection. Nor are there wanting celebrated Authors, who agree with me in this Opinion; ſuch as *Willis de Febribus, Cap.* 16. *Welſchius, de Purpura Lipſ. Rolfinckius, Lib. de Ord. & Meth. Conſult. Lib.* 4. *Sect.* 2. *Cap.* 6.

In both Species of Purples, whether benign or malignant, nothing is ſo prejudicial, or has ſuch a direct Tendency to increaſe the Cauſe of the Diſorder, heighten its Symptoms, and render it malignant, as an Exceſs either of Heat or Cold; for this, of all Diſorders, can leaſt bear Refrigeration, or exceſſive Heat, but, with reſpect to both, requires great Moderation: So that the Room in which the Patient lies, and the Air ſhe breathes, are always to be kept in a due and equal Temperature; for, if the cold Air is freely admitted to the Surface of the Body; or if only the Arms, after being hot and moiſt in Bed, are ſtretched out, the whole Body is forthwith ſeized with Horror and Shivering; and, after great Anxiety and Languor, the Puſtules diſappear; and this happens more eaſily, and with the greater Danger, the warmer the Room is, or the more cloſely the Patient has been covered with a Load of Bed-cloaths. In like manner, in all Exanthematous Diſorders, eſpecially the Purples, nothing, eſpecially in the Vigour of the Diſeaſe, is more prejudicial, than frequent changing the Degrees of Heat produced by the Fire in the Room, becauſe the ſudden Changes from hot to cold, and from cold to hot, violently affect the nervous and ſenſible Subſtance of the Skin, and ſurpriſingly vary and diſturb its Tone, Strength, and Motion; ſo that the Puſtules either cannot appear, or, if they appear here-and-there, cannot long continue.

Great Injury is done to Perſons labouring under the Purples, by an exceſſive Heat of the Room or Fire; as, alſo, by Heat raiſed by the Exhibition of hot Liquors, or Medicines of an heating Quality; ſince, by theſe means, all the Parts being agitated by a continual Heat, the Strength is not only impaired, and, the porous Subſtance of the Skin being too open, too great a Quantity of the Moiſture diſſipated, but the morbid Matter, by the hot inteſtine Motion, is, alſo, rendered more ſubtile, penetrating, and acrimonious; ſo that the Itching, Heat, and Anxiety, are ſo far from being diminiſhed, that they are increaſed. Hence we often obſerve, that the Symptoms are augmented, and rendered more dangerous, by drinking large Quantities of hot Tea, or any other Infuſions, or by eating hot Aliments, or uſing hot Liquors.

Much leſs can the Purples bear the internal Uſe of heating Medicines, Wines, ſpirituous Liquors, ſudoriſic and expelling Subſtances, bezoardic Tinctures, and Eſſences, together with Alexipharmics, ſince, by means of theſe, the Diſorder is always augmented. Thus I have ſeen chronical Purples of a mild Nature, and free from a Fever, and violent Symptoms, by external Heat, the Uſe of Antiſcorbutics, and purifying Decoctions, and a ſtrict ſudoriſic Regimen, converted into Purples of the malignant Kind; ſo that the Patient has afterwards been afflicted with febrile Heat, a Loathing of Food, a Laſſitude of the Strength, and a Want of Sleep. It has, alſo, been found from Experience, that the ſooner and more impetuouſly the Purples are expelled by Medicines, and an hot Regimen, the more eaſily they are repelled to the internal Parts, by the ſlighteſt Cauſe.

Beſides, in the Purples, exceſſive and liberal Purging is highly prejudicial; for ſo peculiar is the Nature of this Diſeaſe, that it admits neither too great Coſtiveneſs, nor too great Solubility of Body, much leſs artificial Evacuations by Stool. Hence, if the Patient is for a long time coſtive, the pent up Recrements are convey'd to the Surface of the Body; and the bilious, mucous, and fermentable Scoriæ, which ought, by means of the Liver, Pancreas, and glandular Coats of the Inteſtines, to be evacuated by Stool, are convey'd to the Skin; or, being collected, and mutually mixed, in the long and winding Canal of the Inteſtines, they are more corrupted by their Continuance there; and, being thence convey'd to the Maſs of Blood, along with the chylous and nutritive Juices, lay a copious Foundation for the Diſeaſe, and the Increaſe of the morbific Matter. Hence, unleſs the Evacuation by Stool, and the other Excretions, are recalled and reduced to Order, the Diſeaſe is rarely perfectly cured, but either frequently returns, or is long protracted.

We are, alſo, to take care not to procure the Excretions, by acrid ſtimulating Medicines; for which Reaſon we are carefully to abſtain from all, even the mildeſt Emetics, all Purgatives and Laxatives, tho' deſtitute of Virulence, as, alſo, from all ſaline Subſtances; nor is it always ſafe to render the Body ſoluble by a Clyſter, or Suppoſitory, eſpecially before, and a little after, the Eruption of the Puſtules; for, the internal Parts being ſtimulated by this means, the Motion of the Fluids to the Surface of the Body is forthwith diſturbed, the Perſpiration obſtructed, and the Pores of the Skin contracted, ſo that the Efflorescences diſappear.

Unſeaſonable Veneſection, alſo, contributes a great deal to the dangerous Retroceſſion of the Purples; for as in all Exanthematous Diſorders, ſo eſpecially in the Purples, it is of the greateſt Importance, that the Blood ſhould be in a due Quantity and Proportion, and that it ſhould be convey'd to the Surface of the Body; for either an Exceſs, or a Defect, is attended with Danger. If the Quantity of Blood is too great, from the ſpaſmodic Strictures of the Parts, fatal Congeſtions of the Blood in the nobler Parts are to be dreaded. But, if the Quantity of the Blood is too ſmall, it cannot be forced to the moſt minute Veſſels of the Skin, and the Organs deſtin'd for the Secretion of the Sweat; and the peccant Matter is leſs duly eliminated through this capillary Strainer, but with the greateſt Danger remains immoveable in the internal Parts of the Body. Hence hardly any thing is more to be dreaded in this Diſorder, than the Danger ariſing from unſeaſonable Veneſection. I myſelf have frequently ſeen the Practice of ſome, who, in chronical Purples afflicting hypochondriac Patients, ſubject to ſpaſmodic Strictures, adviſed Veneſection, ſo unlucky, that, the Exanthematous Efflorescences ceaſing ſuddenly, an apoplectic Fit was brought on. In Caſes of this Nature, I have, alſo, known the moſt violent Contractions of the Joints, and almoſt fatal convulſive Motions of the Parts, brought on by ill-timed Veneſection.

In the Miliary Fever, ſome adviſe Veſicatories, if the Diſorder proceeds from an acid corrupted Lymph, that by this means the peccant Matter may be extracted, and, at the ſame time, the oppreſſed nervous Fibres ſtimulated to a ſtronger Contraction. Thus *Hamilton*, in his Treatiſe *de Febre Miliari*, highly extols the repeated Application of them to the Scapulæ, in the following manner: "The Seroſity of the Humours is "excellently leſſen'd by Veſicatories; for, by their means, "the morbific Matter being in ſome meaſure leſſened, Nature "can more eaſily throw off the reſt in the manner to which "ſhe is accuſtomed; ſo far are Veſicatories from hindering "the Eruption of the Puſtules." But, though this Method of affording Relief in the Puſtules ſeems pretty conſonant to Reaſon, yet, I confeſs, I never uſed it; and muſt, therefore, leave it to others to make Trial of it. *Frederic Hoffman.* See MILIARIS FEBRIS.

PURULENTIA. Purulence, or Suppuration.

PURULENTUS. Purulent, full of *Pus*, or Matter.

PUS. Matter. See ABSCESSUS, INFLAMMATIO, and SUPPURATIO.

PUSCA. The ſame as POSCA. *Blancard.*

PUSILLATUM, or PUSULATUM. A coarſe, or groſſy Powder.

PUSTA. A Digeſtion of Sanies. *Rulandus.*

PUSTULA. A Puſtule. Theſe principally appear in the Spring, and are of various Kinds; for ſometimes a certain Roughneſs ariſes all over the Body, reſembling that which is produced by the Application of a Nettle, or the Obſtruction of

Sweat, and are by the *Greeks* called ἐξανθήματα. Theſe are ſometimes red, and ſometimes retain the natural Colour of the Skin; ſometimes large Numbers of them appear of the Bulk of *Vari*, and ſometimes larger. There are, alſo, Puſtules of a livid, a pale, a black, or any other unnatural Colour, with an Humour contained in them. When theſe break, the ſubjacent Fleſh appears, as it were, ulcerated. Theſe are by the *Greeks* called φλύκταιναι ἑλκώδεις, and are produced by Cold, Fire, or Medicines.

But the φλυζάκιον (*Phlyzacion*) is a Species of Puſtule, ſomewhat harder, whitiſh, and riſing in a ſharp Point. But Puſtules are ſometimes converted into ſmall Ulcers, either moiſt or dry, ſometimes accompanied only with an Itching, at other times with Inflammation and Pain; and a Pus, or Sanies, or both, are diſcharged. This happens principally in Children, rarely in the Trunk of the Body, but frequently in its Extremities.

The worſt Species of Puſtule is, that call'd ἐπινυκτὶς, which is generally of a ſomewhat livid, blackiſh, or even of a white Colour. Round about this Kind of Puſtule, there is a violent Inflammation; and, when it is laid open, a mucous Exulceration of the ſame Colour, contained in the Puſtule, is found within. The Pain accompanying it is far more intenſe than could be expected from its Bulk, which is no greater than that of a Bean. This Species of Puſtule, alſo, ariſes on the Extremities of the Body, and generally in the Night-time; from which laſt Circumſtance, the *Greeks* gave it the Name of ἐπινυκτὶς.

In the Cure of all Puſtules, the firſt Step to be taken is, to uſe much Exerciſe and Walking; and, if theſe cannot be practis'd, Geſtation is their beſt Succedaneum. The ſecond Step is, to diminiſh the Quantity of Aliments, and abſtain from all acrid and extenuating Subſtances. The ſame Meaſures are to be taken with the Nurſe, when a ſucking Infant is affected with Puſtules. Beſides theſe Steps, when the Patients are robuſt, and the Puſtules but ſmall, they ought to ſweat in a Bagnio, have Nitre ſprinkled on the Puſtules, and be anointed with a Mixture of Wine and Oil, after which they are to go into the Bath. If theſe Meaſures prove ineffectual, or if the Puſtules are of a large Kind, Lentils are to be applied to them; and, when the Skin is removed, we are to have recourſe to mild Medicines. After the Application of the Lentils, the ἐπινυκτὶς is commodiouſly cured by Knot-graſs, or green Coriander.

Ulcers formed from Puſtules are removed by Litharge mix'd with the Seeds of Fenugreek, adding Oil of Roſes, and the Juice of Endive, till the Preparation is of the ſame Conſiſtence with Honey. The Puſtules of Infants are very properly anointed with the following Preparation:

> Take of the Stone by the *Greeks* called πυρίτης, eight Drams; mix with fifty bitter Almonds; and add three Cyathi of Oil, in order to make an Ointment: Before the Uſe of which, however, the Puſtules ought to be anointed with Ceruſs. *Celſ. Lib.* 5. *Cap.* 28.

PUTORIUS. The Fitchet. The Fleſh of this Animal is ſaid to be reſolutive, externally applied.

PUTREDO, or PUTREFACTIO. Putrefaction.

The happy Influence of Natural Philoſophy and Chymiſtry upon Medicine is in no Inſtance more palpably evinced, than in the Doctrine of Putrefaction; the great Importance of which in Medicine, and its Neceſſity to the Phyſician, we ſhall prove from ſeveral Arguments, after having inveſtigated its Nature, Cauſes, and Effects, from phyſical and chymical Principles, that its Uſe, in the Application of things of a medicinal Nature, may be the more apparent. The Putrefaction, therefore, of a Body, is nothing but an intimate Diſſolution of the Parts of which a Body conſiſts, from their Union and Connection, accompanied with a volatile and fetid Exhalation, and changing the whole Craſis, Properties, and Qualities, of the mixed Body.

The Diſſolution of Bodies is juſtly diſtinguiſhable into ſuperficial and intimate, or radical. In the former, the Body is only divided into its moſt minute Parts, every one of which ſtill retains its peculiar Nature, Virtues, and ſpecific Qualities. Thus, in a Solution of Gold with Aqua Regia, though the Gold is reſolved into highly minute Atoms, as is obvious from this, that a few Drops of ſuch a Solution are capable of giving another Taſte to a whole Pint of Spirit of Wine, yet by a Precipitation made by ſome Salt, either of the lixivial, or volatile Kind, theſe Particles, or Atoms, appear to have perfectly retained the Nature of Gold. But an intimate, or radical Solution is that, in which the Parts of a Body are ſo removed from their Situation, and ſo reſolved from their intimate Mixture, on which the ſpecific Differences of Bodies depend, that, being abſolutely transformed into another Texture and Diſpoſition, they aſſume new Qualities and Virtues. Thus, in the Solution of the Aliments in the Stomach and Inteſtines, by the ſubtile and univerſal ſaliva Menſtruum of the Stomach, and the Influence of the animal Heat, the intimate Mixture and Texture of the Aliments are ſo deſtroy'd, that their Taſte, Smell, Colour, Conſiſtence, and other Qualities, being deſtroyed, they produce Chyle and Fæces. Thus, alſo, in the Fermentation of Vegetables, the ſweet Juices of Grapes, and Summer Fruits, by means of Fermentation, loſe their ſweet and temperate Nature, and are either changed into an acid, ſpirituous, or a vinous intoxicating Liquor; among theſe intimate Solutions, we ought, alſo, to reckon Putrefaction, the Nature and Effects of which conſiſt in extinguiſhing the Mixture, Form, Qualities, and Virtues of Bodies.

The Cauſe of this intimate Diſſolution, whether of the fermentative, or putrid Kind, is an inteſtine Motion of the moiſt Parts, and a copious Influx of a hot and violently agitated Matter; for as there can never be a Solution of a ſolid Body without Moiſture, ſo without Water, the original Fluid, there can neither be Fermentation nor Putrefaction; for Water is the univerſal Menſtruum, which not only deeply inſinuates itſelf into the Pores of Bodies, but, alſo, becauſe its Parts are in a continual inteſtine Motion, is able to disjoin and remove *from their Situation the Parts of Bodies, which are variouſly* mixed and united: But it produces this Effect moſt happily, when aſſiſted with Heat; which is no more than the rapid Motion of an ethereal and celeſtial Matter, furniſh'd with a great expanſive Power, propelling from the Centre to the Circumference. The Moiſture, then, when acting on Matter capable of Fermentation and Putrefaction, reſolves the ſaline, ſulphureous, and earthy Parts, receives them into itſelf, and carries them off with it in its Motion.

But though both Fermentation, and Putrefaction, are produced by an inteſtine Motion of the Moiſture, and of the hot Principle, yet their Effects are very different, ſince, by Fermentation, a ſulphureous inflammable Spirit, but, by Putrefaction, a volatile urinous Spirit, is produced; for which Reaſon Putrefaction is always accompanied with a fetid Smell. 'Tis, alſo, to be obſerved, that the Juices of Animals admit of no Fermentation, nor can any vinous inflammable Spirit be prepared from them, ſince theſe are the Properties of Vegetables alone; which, however, are capable of Putrefaction, as well as the Juices of Animals. The Reaſon why Animals, and their Parts, are only capable of Putrefaction, but can never, by Fermentation, yield an inflammable Spirit, is only to be ſought for in the different Mixtures of Animals and Vegetables, ſince theſe laſt admit into their Mixture not only an Oil, but, alſo, an Acid, which in Diſtillation is obtain'd from them; whereas in Animals no ſuch thing is found, ſince they are rather impregnated with an Oil, and a ſubtile volatile Earth, which, by the Action of the Fire, becomes ſaltiſh. In the Fermentation, therefore, of Vegetables, by the warm inteſtine Motion the tartareous Acid is firſt diſſolved, by which, when it begins to act on the ſulphureous and oleous Parts, an Effervescence, in conſequence of this mutual Action and Reaction, is not only excited, but, alſo, a copious penetrating Vapour is raiſed, and carried off in the Air; and, laſtly, by the mutual Combination of acid and oleous Parts in the Acid, a ſpirituous or vinous Liquor is produced. But in Putrefaction, where the Acid is defective, the oleous, ſulphureous, and ſaline volatile Principles are forthwith carried off; and, being neither fixed nor corrected by the Acid, are freely diſſipated in the Air with a nauſeous and fetid Smell; which, according to indiſputable chymical Experiments, is produced by an oleous, or ſulphureous Principle, and a volatile Salt. A palpable Inſtance of this we have in mineral Sulphur, which, in its native State, is without Smell; but, when fuſed over the Fire with a lixixial Salt, aſſumes an ungrateful Odour. If, therefore, we intend to obtain a volatile oleous Salt from Animals, we muſt either ſubject them to Putrefaction, or burn them with a ſtrong Fire; by which means both their oleous and volatile Parts are freed from the Contexture of other Parts with which they were entangled.

We have already obſerved, that Moiſture and Heat were the principal Inſtruments of Diſſolution, both in Fermentation and Putrefaction; ſo that, without the former two, neither of theſe can be performed. Hence it follows, that a Body, which has otherwiſe a great Tendency to Putrefaction, cannot be more effectually preſerved from it, and kept ſound, than by removing Heat and Moiſture. For this Reaſon, Bodies ſufficiently dried are never obſerved to be ſubject to Putrefaction and Corruption. Pork and Beef dried by Smoke, and the Influence of the Air, do not eaſily become putrid: But, if, by Maceration in Water, they receive a due Degree of Moiſture, they ſoon become putrid in a warm Air. Such, alſo, is the peculiar Nature of Cold, that it preſerves Bodies from Putrefaction, for no other Reaſon, than that by a certain rectilinear Motion it preſſes and conjoins the Parts, ſo that they are not eaſily diſjoined, and put out of their Situation; whereas Heat, by its vertical Motion round its own Axis, expands and enlarges the Pores, and propels the Parts from the Centre to the Circumference.

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But as there are various ways of removing Moiſture, or Humidity, ſo there are as many Methods of preſerving Bodies from Putrefaction. Thus 'tis certain from Experience, that highly rectified Spirit of Wine is very proper for preſerving Bodies from Putrefaction, when kept in it, becauſe it quickly imbibes and abſorbs the Moiſture of Vegetables and Animals from their internal Pores and Parts. Hence Bodies, before ſoft, are indurated: But the Experiment ſucceeds more happily, if freſh dephlegmated Spirit is frequently pour'd to them. And though by means of diſtil'd Oils, and liquid Balſams, the Embalming and Preſervation of Bodies from Putrefaction may be obtained; yet highly rectified Spirit of Wine is far preferable to them all, becauſe it is of a more penetrating Nature, and more eaſily enters the internal Parts of the Bodies, than reſinous balſamic Subſtances.

There is, alſo, another Method of preſerving Bodies from Corruption, which is by Salts, the moſt conſiderable of which are common Salt and Alum, which excellently imbibe the Moiſture, by the Abſorption of which the fleſhy Fibres are rendered harder. The more pure and dry theſe Salts are, the more happily they produce this Effect. And as Alum, in conſequence of its large Number of terreſtrial Particles, is of an aſtringent Quality, by which the Parts are more intimately united and connected with each other, ſo by means of a Lixivium prepared of Alum, and common Salt, all the Viſcera of the human Body may for ſeveral Years be preſerved entire.

'Tis to be obſerved, that corruptible Fluids, if agitated with a continual Motion, do not eaſily become putrid; but that ſtagnant and putreſcent Fluids, ſuch as are obſerved in Marſhes, are eaſily ſuſceptible of Corruption: For Heat and Moiſture, continually acting upon quieſcent Particles, more eaſily diſſolve and deſtroy their Mixture, than if they perpetually changed their Place and Situation, in which caſe the Action and Change of Heat is more tranſitory; whereas, in quieſcent Particles, it is more durable and permanent. We, alſo, obſerve, that Vegetables abounding with Moiſture, and collected in a large Heap, become more eaſily warm and putrid, than when they are ſcattered; in which Caſe, they remain free from Putrefaction: The Reaſon of which is this, that, when they are collected into an Heap, the Effluvia excited by the Motion of the Moiſture, and the inteſtine Warmth, cannot be exhaled and diſſipated in the Air; but, being pent up, and returning, as it were, on themſelves, accelerate the inteſtine putredinous Motion, inſtead of diminiſhing it. But nothing more effectually prevents the Corruption of corruptible Bodies, and diſſipates it when beginning, than the Acceſs of a free Air, eſpecially of the dry and cold Kind. 'Tis, alſo, to be carefully obſerved, that a beginning Putrefaction is of a very multiplying Nature, and diffuſes itſelf very quickly; for it acts like Leaven, which quickly puts the homogeneous, and eſpecially the moſt adjacent, Parts into the like putredinous Motion with itſelf; as we plainly ſee in fermentable Subſtances, where a little Leaven added to a farinaceous Maſs, or the Juice of Vegetables, immediately throws them into the like fermentative Motion.

Having thus, from the Principles of Natural Philoſophy and Medicine, inveſtigated the Nature, Generation, and Effects of Putrefaction, it will be far more eaſy to apply what we have ſaid to medicinal Purpoſes in the human Body, in which a ſingular and wonderful Phenomenon recurs to be explained, that is, why the Bodies of Animals, and the Juices contained in them, which in their own Nature are ſo prone to Putrefaction, when Moiſture and Heat are preſent, do not, however, become putrid ſo long as the Animal is alive, but remain ſound and entire; whereas they quickly become putrid after the Death of the Animal. And in this principally conſiſts the Preſervation of Life, the Cauſes of which ought to be carefully inveſtigated by every Phyſician. Thoſe are greatly deceived, who ſeek for the Cauſe of the Preſervation in a certain vital Spirit, or Balſam, and the innate Heat, ſince, inſtead of ſpecifying the true Cauſes, unmeaning Words which explain nothing, are only uſed. They are, alſo, no leſs deceived, who think that this Preſervation is the Effect of the Salt and Sulphur contained in the vital Juices; for 'tis certain from Experience, that neither ſaline, nor ſpirituous Subſtances, nor balſamic Medicines, copiouſly exhibited, are of ſuch Efficacy as to remove Putrefaction, ſince they rather contribute greatly to promote it; for we obſerve, that the Bodies of ſcorbutic Patients, whoſe Juices abound with ſaline and ſulphureous Parts, eaſily fall into a ſphacelous Corruption; ſo that other Cauſes muſt be aſſigned for this vital Duration, or Preſervation. Now we obſerve, that ſo long as the Maſs of Blood and Humours, of themſelves very corruptible, is continually, by a progreſſive and circular Motion, carried through the vaſcular Structure of the Body, it remains free from Corruption; but ſo ſoon as theſe Humours, ceaſing to move, or circulate, ſtop, or become ſtagnant, in the ſolid Parts, they ſoon become ſubject to Putrefaction, which immediately diffuſes itſelf, and, ſpreading to the adjacent Parts, brings on a Mortification and Sphacelus of them. Whenever, alſo, the Circulation of the Blood is totally removed, which happens in Death, Putrefaction immediately enſues, unleſs it is prevented by Cold, or ſome other external Cauſe.

Hence 'tis obvious, that the Circulation of the Blood is the Cauſe which defends the Bodies of Animals from Corruption; and ſo long as the Circulation is entire, the Body is free from all the Injuries of Putrefaction. But we muſt inquire, whether this Flux and Reflux of the Blood produces this Effect only by its progreſſive Motion, or whether other Cauſes, alſo, concur with it, which ſeems moſt probable; for, by means of this continual Circulation of the Blood, the hot inteſtine Motion of its conſtituent Parts is greatly increaſed, and the Juices not only conſumed, but, alſo, gradually converted into a ſaline ſulphureous Excrement. Hence 'tis obvious, that the Circulation has rather a Tendency to deſtroy than preſerve the due Mixture of the Maſs of Blood, as is obvious from the intenſe Heat of Fevers, where, in conſequence of the briſk Circulation of the Blood, a greater inteſtine Agitation of the Parts is produced, and a more violent Heat excited, which not only conſumes the Body, together with its Strength and Juices but, alſo, reſolves theſe laſt into excrementitious Parts, which ought to be eliminated partly by Perſpiration, and partly by Urine and Stool. Beſides, with the Air, Aliments, and Drink, many Parts foreign to the Mixture of Blood, and highly ſubject to Corruption, are often mixed with the Blood; and, if theſe are retained in the Habit, they muſt naturally diſturb and deſtroy the Nature and benign Mixture of the Blood. During the vital Action, and perpetual Motion, of the Fluids, we, alſo, obſerve, that a corruptible Matter fit for inducing Putrefaction, is generated in the Blood. Hence Reaſon dictates, that theſe Parts, ſo prejudicial to Life, by ſpoiling the due Craſis and Mixture of the Blood, ſhould, with all Care, be ſeparated, ſecreted, and eliminated from the Body.

Hence it is, that unerring Nature, in the curious Structure of Animals, has formed numberleſs ſecretory and excretory Organs; by means of which, not only the Excrements of a more fixed, but, alſo, of a more moveable, volatile, ſaline, ſulphureous, aqueous, and aereal Nature, are continually and uninterruptedly ſeparated from the Blood and vital Humours. This Purpoſe is excellently anſwer'd by that large Organ the Liver, which is continually employ'd in ſeparating from the Blood the ſulphureous Scoriæ, together with the hot, ſaline, and ſerous Parts. There are, alſo, here-and-there in the Body, numberleſs conglomerate Glands, which conſiſting of infinitely ſmall Tubes, continually ſecrete a ſubtile and highly fermentable Fluid of a ſalival Nature, which, having performed its Office, is eliminated from the Body. The Skin, alſo, being full of Tubes and Pores, is, as it were, an univerſal and common Emunctory, through which the ſerous, ſulphureous, ſaline, and excrementitious Parts of the Humours are eliminated. The Kidneys are the Organs through which a ſaline, ſulphureous, and thick Serum is ſtrained; and through the large Inteſtines the feculent Sordes and Fæces are evacuated.

For, in order to preſerve the due Mixture of the vital Fluids, 'tis not only requiſite there ſhould be a perpetual Separation of the ſuperfluous Parts, but 'tis, alſo, neceſſary there ſhould be another Preſervative of Life and Health, not mentioned by modern Writers; which is a freſh Acceſſion of mild and temperate Juices, in the room of the corrupted Fluids, eliminated from the Body. Hence we ſee the Reaſon, why Men, and brute Animals, in order to prevent internal Putrefaction, and preſerve Life, ought conſtantly to have due Supplies of Aliments, from which laudable, temperate, ſweet Juices, fit for nouriſhing and increaſing the Strength, ſuch as the chylous and lacteal Juices are, may be again generated; for, without ſuch a new Acceſſion and Afflux of freſh Juices, Life and Strength cannot be long preſerved; ſo that Life is excellently preſerved, and a mortal Putrefaction prevented, in the Bodies of Animals, by means of Aliments, and due Excretion. It muſt, alſo, be obſerved, that in Adults, who ſtand in no need of having the Parts of their Bodies farther increaſed, the Excretions ought, in order to a due and equable State of Health, to be equal to the Aliments taken.

This firm and unſhaken Foundation of Health, conſiſting in this, that every Subſtance approaching to Corruption, and capable of inducing Death and Deſtruction, ought carefully and perpetually to be abſtained from, furniſhes us with various Corollaries and Theorems, of ſingular Uſe in Practice: For, firſt, from what has been ſaid, we may deduce the Nature and immediate Cauſe of Death, and the Putrefaction which ſucceeds it, and is, in its own Nature, highly unfriendly to Life: The Cauſe, then, of theſe Effects is a deſtroyed Circulation of the Blood, and the Putrefaction and Corruption ariſing thence, which, on the contrary, is generally the Cauſe of the Deſtruction of the Circulation, and, conſequently, of Death; for, from a careful Diſſection of thoſe who have died both of acute

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and chronical Diſorders, the Cauſes of Death are always manifeſt and conſpicuous; ſince one or more of the Viſcera, or more noble Parts, appear corrupted, putrefied, or ſphacelated, by an Extravaſation or Stagnation of the Humours: But in thoſe who die ſuddenly, or of violent acute Diſorders, which are not to be known without Difficulty, polypoſe Concretions, conſiſting of various Fibres and Membranes, are frequently found in the large Veſſels; eſpecially in the Ventricles of the Heart, and the Sinuſes of the Dura Mater; which, by obſtructing the free Circulation of the Blood, deſtroy the Patient.

Since, therefore, the whole Buſineſs of the Phyſician conſiſts in procuring long Life, preſerving the Body ſound, and preventing untimely Death, and the Diſorders which bring it on, he certainly cannot, in a more effectual manner, anſwer theſe grand Intentions, than by preventing and removing Corruption and Putrefaction, both in the internal and external Parts. But this End cannot be better obtained, than by preſerving a free Circulation of the Blood through all the Parts of the Body, and removing every Cauſe which may in the leaſt *obſtruct and hinder it.*

But ſeveral Cauſes are capable of diſturbing and hindering this Circulation; the moſt conſiderable of which is, a Redundance of Blood and Humours, which, by its ſtrong Reſiſtance and Expanſion, impairs the Elaſticity of the Fibres of the Heart, and its Auricles, ſo that the Circulation becomes very ſlow and languid: And this Circumſtance, unleſs ſoon removed, produces Stagnations of the Humours, Infarctions of the Viſcera, Obſtructions, Indurations, Extravaſations of the Humours, and putredinous or apoſtematous Corruptions of the Parts. By this ſlow Circulation of the Blood and Humours, the Excretions are leſſened, and particularly thoſe made by Perſpiration, and that of the bilious Humours, large Quantities of which are daily ſecreted in the Veſſels of the Liver. Hence large Quantities of Impurities, of various Kinds, muſt neceſſarily be accumulated in the Maſs of Blood.

But a Plethora ſo unfriendly to Health and Life is very incident to thoſe, who, being of ſpongious Habits, live luxuriouſly, and indulge themſelves in Eaſe and Quiet: But Women are ſtill more diſpoſed, than Men, to generate a larger Quantity of Blood than is neceſſary to Nutrition and Life. Leſt, therefore, this Redundance of Blood and Humours ſhould injure Health, or threaten Death, the Structure of our Bodies is ſo artfully contrived, that the Veſſels and nervous Parts have a peculiar Kind of Motion, by which they prevent Stagnations, and free themſelves from the Load of redundant Blood, ſo unfriendly to Nature; in Childhood, generally by the Noſe; in Women, by the Uterus; and in Men, by the hæmorrhoidal Diſcharge returning at ſtated Periods: When, therefore, the uſual and ſalutary Excretions, deſtined for diminiſhing the redundant Blood, are, by any Cauſe, rendered defective, diminiſhed, or violently ſuppreſſed, numberleſs Misfortunes are produced; and, unleſs Relief is ſoon afforded, the Body is rendered ſubject to Diſorders of all Kinds, both of a chronical and acute Nature, as is ſhewn in *Medicin. rational. Fred. Hoffman. Tom.* 2. I have frequently ſeen plethoric Women, who, having their Menſes ſuppreſſed by a Fright, upon the Acceſs of Cold, or the Uſe of a draſtic Purgative, have ſoon after died of a ſphacelous Corruption of the Parts; and immediately after Death, their Bodies became tumid, and were ſeized with an highly fetid Putrefaction, large Bliſters riſing here-and-there upon them.

From what has been ſaid, any one may conceive, that Putrefaction and Death may be generated only by a Redundance of laudable Blood: In order to prevent which, no Remedies are more proper than Veneſection, or a Reſtitution of the uſual Excretions of Blood: But if any one is unaccuſtomed to Veneſection, and naturally abhors it, and at the ſame time feeds and lives in ſuch a manner as is fit for generating large Quantities of Blood, whilſt Nature is ſlow, or abſolutely defective, in carrying on the Excretions; ſuch a Patient is to be treated in another manner, and great Care taken, leſt he fall into ſome violent, or, perhaps, mortal Diſorder, ariſing from Putrefaction: For, according to his peculiar Circumſtances, ſuch Things as leſſen the Redundance of the Blood and Humours, are to be uſed; ſuch as proper Exerciſe, Abſtinence, light Drink and Aliments, Bathing, Laxatives, Infuſions, and a due Uſe of the Mineral Waters, both of the hot and cold Kind.

It is, alſo, certain, that a mortal Putrefaction may be produced, by a Penury or Defect of Blood: For though it is ſeemingly moſt probable, that different Cauſes muſt produce different and diſſimilar Effects; yet it is certain, from various Inſtances, that, in the human Body, contrary Cauſes may conſpire in the Generation of the ſame Diſeaſe: But we ſhall now content ourſelves with ſhewing, in what manner both a Redundance and Penury of Blood may induce a mortal Corruption on the Humours, and ſolid Parts. We have already obſerved, that the redundant Blood eaſily ſtagnates in the Veſſels, and ſoon becomes impure, in conſequence of the Diminution, occaſioned by a Plethora, of the Secretions and Excretions, which ought to free the Blood from impure Sordes, and excrementitious Matter, which have a great Tendency to Corruption: The ſame, in like manner, happens from a Defect of laudable Blood; for, as, by a natural and due Quantity of Blood, all the Veſſels are kept open, ſo, in conſequence of a Penury or Scarcity of it, they collapſe, and have their Diameters leſſened, or, perhaps, are at laſt totally blocked up: Hence the benign and nutritive Juices can neither be conveyed to the ſolid Parts, nor a ſufficient Quantity of the nervous Fluid be generated in the Brain; by which means the Strength is greatly impaired. Beſides, as the Impulſe of the Blood, by the due Diaſtole of the Heart and Arteries, ſuch as is obſervable in the Pulſe, depends upon a ſufficient Quantity of Blood, it muſt neceſſarily happen, that, under a Defect of this Fluid, the Pulſe muſt become very weak and languid, whilſt the Blood itſelf is not duly propelled through the minute capillary Veſſels of the Viſcera, but ſtagnates here-and-there in the Viſcera; ſuch as the Lungs, Spleen, and Liver: *And this State is ſucceeded* by Corruptions, Cachexies, ſlow and hectic Fevers.

Now there is not a nearer Way to Corruption, and the Diſorders ariſing from it, than when, after the Strength is conſumed, by violent Hæmorrhages, ſevere previous Diſeaſes, long-continued Paſſions of the Mind, Grief, or Hunger, Perſons voraciouſly eat large Quantities of Aliments, which, as they cannot be ſufficiently digeſted, and the uſeful ſeparated from the uſeleſs Parts, on account of the weak and languid Force of Natur, ſo they not only generate a large Quantity of peccant Humours in the *Primæ Viæ*, but the Veſſels, alſo, in conſequence of the obſtructed Excretions, are filled with impure and corruptible Juices, and a great Diſpoſition to malignant and putrid, or to ſlow and hectic Fevers is brought on; for it is certain from Experience, that terrible Camp Diſeaſes, as malignant and petechial Fevers, the *Hungarian* Fever, Diarrhœas, and malignant Dyſenteries, afflict the Soldiers moſt, ſpread themſelves fartheſt, and are moſt contagious, in the Autumn, and when they begin to leave the Camp, for no other Reaſon than that, during the Summer, under the long Heat, the Night-colds, the continual Fatigues and Watchings, or, perhaps, corrupted Aliments and Liquors, they have loſt their Strength, and laudable Blood; inſtead of which they have their Veins and *Primæ Viæ*, ſtuffed with large Quantities of corrupted Juices, which are highly ſubject to Putrefaction, and, in acute Fevers, generally induce a mortal Sphacelus on the internal Parts.

Having thus conſidered the Cauſe of malignant Diſorders, which is a Defect of laudable Blood and Juices, and a conſequent eaſy Tranſition to Putrefaction, every thinking and judicious Phyſician muſt certainly perceive, that nothing is more dangerous than to exhibit too much Aliments, eſpecially of bad Juices, to Perſons weakened by Diſeaſes, or any other Cauſes; ſince ſuch Perſons are, according to *Celſus*, highly ſubject to putrid Diſeaſes: But it is better, in ſuch a Caſe, gradually, and by little and little, to reſtore the conſumed Blood, to eliminate the Crudities attending ſuch a State, either by Perſpiration or Stool, by means of gentle Evacuants; and then to corroborate the Digeſtion, and concoctive Power of the Stomach, by temperate, corroborating, and ſtomachic Medicines, by which means the violent Diſorders, to be dreaded from a Corruption and Putrefaction of the Humours, may be excellently prevented.

There is, alſo, another expeditious Method of bringing on a mortal Putrefaction, in ſound vigorous Perſons, in the very Flower of their Age; which is by the Exhibition of Poiſons, eſpecially thoſe of a cauſtic Quality, ſuch as the three Species of factitious Arſenic, highly acrid Purgatives, or draſtic Emetics prepared of Antimony; for, unleſs the violent Operation of all theſe is ſoon ſtopt by proper Remedies, they quickly prove mortal, by inducing terrible Spaſms of the nervous Parts, and a Putrefaction of the nobler Organs of Life. Upon diſſecting Patients taken off by theſe means, ſphacelous Spots of the Stomach and Inteſtines, accompanied with an intolerable Stench, preſent themſelves to our View; for Poiſons of this Kind, by conſtricting the nervous Parts, and Veſſels of the Stomach, produce Inflammations, which degenerate into a Sphacelus, which is the more fatal to Life, becauſe it ſeizes the nervous and membranous Parts, ſuch as the Stomach and Inteſtines, which have an intimate Conſent with thoſe Parts, which are furniſhed with an exquiſite Senſation, and a briſk lively Motion, and which they, alſo, draw into the like irregular Commotions: It is, alſo, obſervable, that cold Liquors drank by a Perſon over-heated, and covered with a profuſe Sweat, are highly prejudicial, and, in their Operation, frequently imitate Poiſons, by quickly inducing a Sphacelus and Death: And though the Effect is not always ſo fatal, yet we have Inſtances in which cold Liquors, drank by over-heated

Perſons, have proved mortal; and, upon laying open their Bodies, their Viſcera were found ſphacelous. Thus, ſome Years ago, a young Man of eminent Diſtinction, in the Flower of his Age, being covered with a profuſe Sweat, after violent Exerciſe, drank a large Quantity of cold Ale, at a Draught; in conſequence of which, being ſeized with a great Languor, an Uneaſineſs about the Præcordia, a Deſire of vomiting, and frequent Deliquiums, he died of Convulſions on the fourth Day; and, upon opening his Body, a Part of his Stomach was not only ſphacelous, but his Spleen, and the Left Lobe of his Lungs, were found reſolved into an highly fetid and putrid Maſs, black as Ink: For as the Viſcera conſiſt almoſt entirely of a Congeries of highly minute Veſſels, it is of courſe obvious, that they muſt readily be ſubject to Infarctions, and a Stagnation of Blood. When, therefore, a large Quantity of Liquor, actually cold, arrives at the Blood, which, in conſequence of its Motion and Heat, is pretty thin and fluid, it is not ſurpriſing, that the Blood ſhould be immediately coagulated, and, being firmly impacted in the Veſſels, become putrid. In this Caſe there is not a more efficacious Remedy than ſpeedy and ſeaſonable Exerciſe and Motion, whether by riding on Horſeback, or *in a Chariot, after drinking a large Quantity of a* warm Infuſion of the Flowers of Daiſies, common Chamomile, Carduus Benedictus, Paul's Betony, and Scordium; by which the Coaguiation of the Fluids is prevented, and the free Circulation of the Blood, through the Veſſels, promoted: Hence we ſee how ſimple, and yet how efficacious, the Remedies for preventing the moſt terrible of Deaths ſometimes are.

Among the terrible Diſorders ariſing from Putrefaction, we may juſtly claſs the *Morbus Niger* of *Hippocrates*; under which, Humours of a black Colour are not only vomited, but, alſo, highly fetid Excrements diſcharged by Stool. Here it is to be obſerved, that a Vomiting of bloody, or black, Matter rarely proves mortal; but if a large Quantity of Blood is, from the ruptured Veins of the Ileum, conveyed to the Fæces of the Colon, and is not immediately diſcharged, but, ſtagnating, is put into a putredinous Motion with the Fæces, accompanied with an highly fetid Smell, it ſoon kills the Patient: For, in my Opinion, thoſe who die of this Diſorder are not ſo much deſtroyed by the Effuſion of Blood, which is not ſufficient to deſtroy Life, as by the Putrefaction ariſing from the Mixture of the Blood with the Excrements; for this fetid Vapour is highly unfriendly to Nature, ſince, by its Subtilty, it penetrates to, contaminates, and totally deſtroys, that Fluid which animates the nervous and membranous Parts, and governs Senſation and Motion; becauſe the Strength, the Origin of which is no other, than a pure and ſubtile State of the Humours, immediately begins to fail, and at laſt is totally deſtroyed, as we obſerve in a Sphacelus, and ulcerated Cancer of the external Parts, where the Putrefaction, penetrating into the internal Parts, proves the only Cauſe of Death, by deſtroying the Agility of the animal Spirits.

Among the putrid and malignant Diſorders, the moſt terrible are the Plague, and petechial Fevers, which are ſometimes more violent, though leſs contagious, than the Plague itſelf; for theſe Diſorders are propagated, and conveyed to the Body, by a kind of Miaſma, which is nothing but a putredinous Leaven; for as a ſmall Quantity of any Maſs already putrid, mixed with corruptible Subſtances, forthwith infects them, and ſurpriſingly propagates itſelf, ſo highly ſubtile Vapours ariſing from Perſons labouring under the Plague, or petechial Fevers, and received by the Air into other Bodies, partly by the Mouth and Noſtrils, immediately reaches the Maſs of Blood, and being partly ſwallowed with the Saliva, paſſes to the Primæ Viæ, quickly multiplies itſelf, and, at laſt, contaminates the whole Maſs of Humours, producing the moſt terrible Symptoms. That the Nature and Eſſence of theſe Diſeaſes conſiſt in Putrefaction, is obvious from the uncommon Loſs of Strength, the great Weakneſs and Inequality of the Pulſe, the Converſion of the Carbuncles and Buboes into Abſceſſes, the highly fetid Exulcerations, the nauſeous Scent of the Excrements, the black and livid Spots diſperſed over the Body, which are only Species of Sphacelations, and the Smell of the Body after Death. And though theſe Miaſmata infect ſound and healthy Perſons who contain a temperate Blood in their Veins, yet it is generally obſerved, that they exert a greater Force and Influence on Perſons of cacochymic Habits, whoſe *Primæ Viæ* are full of peccant Juices, becauſe they there meet with Humours already diſpoſed to Putrefaction and Corruption; ſuch as thoſe of the ſalival Kind, which are eaſily thrown into a fermentative Motion: Hence the Reaſon is obvious, why the Plague rages moſt among poor People; and why thoſe who are oppreſſed with Hunger, and live in an irregular manner, are moſt ſubject to thoſe putrid Diſorders. If a Dyſentery, the Small-pox, the Meaſles, or a Purple Fever, are accompanied with Signs of a malignant Nature, and prove very mortal, they derive their malignant Nature from nothing but peccant Humours, and Juices diſpoſed to Putrefaction, and corrupted by a depraved Habit of Body.

Having thus inveſtigated the Nature of the Plague, and of malignant Diſorders and Fevers, which conſiſts either in Putrefaction itſelf, or an eaſy Tranſition to it, it will be no hard Taſk for the ſkilful Phyſician to find out proper Remedies, and a due Method of uſing them, both for the Prevention and Cure of theſe Diſorders; for nothing is more effectual for Prevention, than a good Diet, and a proper Regimen, taking care not to load the Stomach with too great a Quantity of Aliments, eſpecially of a corruptible Kind. We muſt, alſo, take care, that the ſalutary Excretions, by which the Blood is excellently depurated, be duly and expeditiouſly carried on; for, by this means, the Miaſma, not finding a Subſtance ſimilar to itſelf, either does not operate at all, or renders the Progreſs and Termination of the Diſeaſe far more happy than they would have otherwiſe been. Under the Cure, thoſe things are carefully to be avoided, which increaſe the inteſtine Motion of the Blood and Humours, ſuch as all alexipharmic, hot, bezoardic, and ſpirituous Subſtances, which are ſo far from hindering the Putrefaction, that they rather accelerate and diffuſe it: The Patient ought, alſo, to *abſtain from all alcaline, volatile, fetid,* and oleous Subſtances, which are only the Produce of Putrefaction: On the contrary, Acids, which, by fixing the volatile and oleous Parts, ſtrongly reſiſt Putrefaction, are the beſt Medicines in the Plague. To this Claſs, alſo, belong earthy bezoardic Subſtances, and ſuch as keep the Body in a gentle Diaphoreſis; ſince there is not a more expeditious Method of removing a beginning Putrefaction, and evacuating the ſubtile fermentable Parts, than by the Emunctory of the Skin: And this Intention is beſt anſwered by ſuch Analeptics as reſtore the Strength, and promote the Circulation of the Blood. Earthy and bezoardic Subſtances have this peculiar to themſelves, that they, in ſome meaſure, preſerve the Mixture of the Blood, and hinder its Diſſolution.

To malignant Diſorders, alſo, belong hectic Fevers, which ariſe not from ſo active, but a ſlow-proceeding Putrefaction, which preys upon the Strength: For, upon opening the Bodies of thoſe who have died of hectic Fevers, they have been found to proceed from corrupt Abſceſſes, degenerating into a Sphacelus, in ſome of the Viſcera, eſpecially the Liver and Lungs. And this Corruption of the internal Parts is the Cauſe, why theſe Fevers are with Difficulty, if at all, ſuſceptible of a Cure.

It is, alſo, to be obſerved, that moſt acute Fevers prove mortal by no other means than Putrefaction, as is obvious from diſſecting thoſe who die of them immediately after Death; on which Occaſion an intolerable Stench, ariſing from nothing but the Putrefaction, is perceived; and, for the moſt part, the Stomach and Inteſtines, or ſome of the nobler Viſcera, are found ſphacelated: But as nothing more reſiſts the Generation of Putrefaction, and the Sphacelation of the internal Parts, than hindering the Stagnation of the Blood, and preſerving its equable Circulation, ſo the whole Buſineſs of the Phyſician is to preſcribe ſuch Medicines as preſerve the Circulation of the Blood, reſtore Strength, and promote Perſpiration; ſuch as temperate bezoardic Mixtures, conſiſting of the Waters prepared from the Flowers of *Egyptian* Thorn, black Cherries, Cinnamon without Wine, Carduus Benedictus, and Roſes, diſtilled Vinegar, Syrup of Citron-juice, the *Mixtura Simplex*, Crabs-eyes, diaphoretic Antimony, Hartſhorn philoſophically prepared, and native or common Cinnabar; the Uſe of which is to be long perſiſted in. Nor are we to ſuffer the Patient to be long coſtive, becauſe the putrid Sordes, when tranſlated from the whole Body to the Inteſtines, and there fermenting together, prove the Fomes of Putrefaction: For the Prevention of greater Miſchief, the *Primæ Viæ* are to be carefully cleanſed. But, for this Purpoſe, we are never to uſe draſtic ſtimulating Medicines, ſince only gentle Laxatives, and mild Clyſters, are to be preſcribed, not in every Period of the Diſeaſe, but in its Remiſſion.

We now come to conſider, whether Camphire, which ſo powerfully reſiſts Putrefaction, that nothing is found more effectual againſt an external Sphacelus and Gangrene, and, for this Reaſon, is called the beſt of Alexipharmics, may be ſafely uſed, to check a Putrefaction. Now, tho' Camphire is an highly ſubtile, though coagulated, and very evaporable Oil, yet it differs from other diſtilled Oils in this, that theſe induce a much greater Heat on the Blood, than Camphire, which ſoon tranſpires; whereas the others, in conſequence of their viſcid Nature, and tenacious Texture, continue longer in the Pores and Parts: This may be confirmed by an Experiment; for half a Dram of Camphire, diſſolved in one Dram of Brandy, and taken internally, by a ſound Man, produces rather a Senſe of Cold, than of Heat, in the internal Parts; nor is the Pulſe increaſed, or the Urine tinged of a red Colour: But if twenty Drops of the Oil of Cinnamon, or Cloves, are diluted in

Brandy, and taken, there is a remarkable Increaſe, not only of the Pulſe, but, alſo, of the Heat. For this Reaſon, in malignant Diſorders, I greatly recommend the internal Uſe of Preparations of Camphire, both for the Cure of Inflammations and malignant Fevers: And in this I do not rely upon Speculation only, but, alſo, upon Fact and Experience, by which we ought to conduct ourſelves in the Uſe of all powerful and efficacious Medicines. In the Height and Exacerbation of the Diſeaſe, if the Skin, and all the Parts ſubſervient to Excretion, are ſpaſmodically conſtricted, and the internal Parts exceſſively hot, eſpecially if the Patient is young, and accuſtomed to ſpirituous Liquors, it is expedient to abſtain from Preparations of Camphire, which are moſt commodiouſly uſed in the Beginning, after cleanſing the *Primæ Viæ* by a Vomit, if neceſſary, in Conjunction with cinnabarine bezoardic Powders, and a few Grains of purified Nitre, uſing at the ſame time a ſudorific Regimen. I know ſome Perſons, who, by certain Signs, appearing to be infected with a contagious malignant Fever, have, by the ſeaſonable Uſe of Preparations of Camphire, once or twice exhibited, had a profuſe Sweat excited, and been perfectly freed from their Diſorder. In the time of the Remiſſion, when the Skin is moiſt, the Pulſe weak, and the Strength low, Camphire, with the Addition of bezoardic acidulated Subſtances, is an excellent Preſervative againſt Malignity; and in violent Deliriums, no Medicine is more efficacious than Nitre, mixed with a ſmall Quantity of Camphire. When the Strength is ſo far exhauſted by the Violence of the Diſeaſe, that it begins to be inſufficient, as it were, for promoting the Circulation of the Blood, it is excellently reſtored by a few Grains of Camphire, diſſolved in Oil of ſweet Almonds. And, laſtly, in Fevers, ariſing from Inflammations of the internal Parts, half a Grain, or a Grain, of Camphire, mixed with Nitre, and frequently exhibited, is of ſingular Service: This Powder I have, alſo, uſed with Succeſs, in violent Peripneumonies.

We now come to inquire, why ſcorbutic Patients, and thoſe waſted with Age, are, generally, ſo ſubject to a fatal Sphacelus, from the ſlighteſt external Cauſe, or ſome Fault of the Blood: This, then, happens, in conſequence of the Propenſity of the Blood to a putredinous Corruption; for a Scurvy is an exceſſive Impurity, or Cacochymy, of the Blood, ariſing from a Redundance of ſaline and ſulphureous Particles, which, in conſequence of the diminiſhed Secretions, not only remain in the Habit, but, alſo, contaminate the benign and temperate Humours, whoſe due and natural Mixture they deſtroy. A Blood, therefore, impregnated with Impurities of this Kind, eaſily degenerates into a State of Putrefaction; for which Reaſon ſcorbutic Patients are often afflicted with ichorous fetid Exulcerations of the Mouth, Fauces, and other Parts, whilſt the Gums become tumid and putrefied, with an intolerable Stench of the Mouth, and the inferior Parts of the Body are covered with Spots of a livid bluiſh Colour; which are the Signs of a ſlight Sphacelation. It is not, therefore, to be wondered at, that, from the ſlighteſt Cauſe, the Blood, becoming ſtagnant in the Parts, ſhould degenerate into a ſphacelous mortal Putrefaction; as, alſo, that a Sphacelus, ariſing from an internal Cauſe, is incapable of being cured; for the Blood, already greatly diſpoſed to Corruption, is ſoon ſo infected by the Putrefaction already begun in one Part, that the Danger cannot be averted by the moſt efficacious Medicines. Sphacelations, both of the internal and external Parts, are, alſo, very familiar to old Perſons, becauſe they have many Circumſtances in common with ſcorbutic Patients; for, in conſequence of the Thickneſs and Rigidity of the Fibres, contracted by Age, all the ſecretory and excretory Ducts become narrower, and have their Diameters leſſened: Hence the Secretions of the laudable Humours, the Application of the nutritive Juice to the minute Veſſels of the Parts, and the Influx of the nervous Fluid into the Nerves, are diminiſhed, the Strength of the whole Body, and all its Parts, impaired, and the Conſtitution rendered dry, parched, and waſted, by a ſlow Conſumption: But as in this Decline of Age, in conſequence of the contracted Emunctories, and diminiſhed Excretions, ſaline and acid Sordes are accumulated in the Primæ Viæ, hence the Blood of old Perſons is full of ſcorbutic Salts: Hence it is, that Itching, a dry Scab, red Urine, calculous Concretions in the Kidneys and Bladder, and tophaceous Concretions in the Gout, Catarrhs, Coughs, Rheumatiſms, Stranguries, and Exulcerations of the Parts, are ſo frequent and familiar to old Perſons: Hence appears the Reaſon why they have this in common with ſcorbutic Patients, that both their internal and external Parts are highly ſubject to a Sphacelation. I have ſeen the ſlighteſt Injury of the external Parts, the Sting, for Inſtance, of a Waſp, a gentle Contuſion, or the unſkilful Paring of a Corn in the Foot, produce a Sphacelus in old Perſons. I have, alſo, ſeen very old Men die of a Cardialgia, or Colic, brought on by ſome ſlight Error in Regimen; for no other Reaſon, than that in thoſe Parts, which were afflicted with Pain, a ſphacelous Stagnation was brought on.

Since, therefore, cacochymic, ſcorbutic, and old Perſons, are ſo ſubject to violent, putrid, and dangerous Diſeaſes, thoſe who intend to keep themſelves free from thoſe Diſorders, ought carefully to abſtain from every thing which can render the Blood impure. But, in particular, old Perſons, who are already half ſcorbutic, ought carefully to abſtain from all ſuch Things as are fit for generating the Scurvy; ſuch as all Sea Subſtances, which do not afford laudable Juices; Fleſh, and other Aliments, indurated in the Smoke, ſalted Subſtances, all rancid, corrupted, and ſemiputrid Subſtances; Aliments of ſtrong Juices, ſuch as Pulſes; a ſedentary Life free from Exerciſe; a foggy, cold, moiſt, and heavy Atmoſphere; heavy, ſharp, or ſemiputrid Waters; living, and ſleeping, in moiſt Places; long-protracted Care and Grief; a Neglect of uſual Evacuations; the too great Uſe of acid and ſpirituous Subſtances; all which, as they are never beneficial, but highly injurious, to weak Habits, ſo they ought carefully to be avoided by old Perſons. *Frederic Hoffman.*

PYCNOCOMOS. A Name for the *Scabioſa*; *integrifolia*; *glabra*; *radice præmorſa*.

PYCNOSIS, πύκνωσις. Condenſation.

PYCNOTICA. Incraſſating Medicines.

PYCTE, πυκτή. A Mixture of Curds, and Honey.

PYE, πύη. The ſame as PHTHISIS. *Aretæus, de Cauſ. & Signis Diuturn. Lib.* 1. *Cap.* 8.

PYELOS. See CHOANA.

PYGÆ, πυγαί. The Buttocks. *Ruffus Epheſius, de Appellat. Part. Corp. Human. Lib.* 1. *Cap.* 15.

PYGARGUS. A Name for a Sort of wild Goat; for the Heron; and for a Species of Eagle.

PYLORUS. The Right Orifice of the Stomach is thus called.

PYODES, πυώδες. Purulent.

PYON. Pus.

PYOPŒUS, πυοποιός. Suppurative.

PYOSIS, πύωσις. Suppuration: Of an *Hypopyon*; a Diſorder of the Eye.

PYR, πῦρ. Fire.

PYRACANTHA. A Name for the *Meſpilus*; *ſpinoſa*; *Pyri Folio*.

PYRACEUM. Perry. See POMACEUM.

PYRAMIDALES MUSCULI. The Pyramidal Muſcles of the Abdomen. See ABDOMEN.

PYRAMIDALIA CORPORA. Two Protuberances of the Medulla Oblongata, are thus called. See CEREBRUM. By ſome Authors the Spermatic Veſſels are thus named.

PYRAMIS. A Cone. In Chymiſtry, uſed for making Regulus of Antimony.

PYRAMISTA. An Inſect, very ſubject to fly into the Fire, or a Candle. The Poets make frequent Alluſions to this in their Love Songs; but it is of no other Uſe, that I know of.

PYRENOIDES, πυρηνοειδής, from πυρήν, a *Nucleus*, or Kernel. A Name for the Tooth-like Proceſs of the ſecond Vertebra of the Neck.

PYRETERION. The Part of a chymical Furnace, which contains the Fire.

PYRETHRUM. Offic. *Pyrethrum Officinarum.* Ger. 618. Emac. 758. *Pyrethrum vulgare Officinarum.* Park. Theat. 858. *Pyrethrum flore Bellidis.* C. B. P. 148. *Bellis montana fruteſcens aeris.* H. Monſp. 31. *An Buphthalmum Canarienſe Leucanthemum.* Pluk. Almag. 73. Phytog. 272. 6? PELLITORY OF SPAIN.

The Roots of the common Pellitory are about a Finger thick, hard, and of a yellowiſh-brown Colour on the Outſide, and whiter within; of a very hot burning Taſte; from which ariſe Stalks about a Foot high, much branched, and cloathed with large winged Leaves, in Shape like thoſe of Chamomile, but larger, and thicker: Among theſe grow ſeveral Flowers, much like the Flowers of Chamomile, but larger, ſet upon long Foot-ſtalks. It grows in *Spain*, and other warmer Countries, flowering in *June* and *July*. The Root is uſed.

The Root of Pellitory of *Spain*, held between the Teeth, helps the Tooth-ach, by drawing forth the cold watry Rheum: It, alſo, helps the Palſy of the Tongue, and the Loſs of the Voice conſequent therefrom: It is put into Maſticatories for that Purpoſe; as, alſo, into drawing Cataplaſms and Plaiſters, particularly the *Emplaſtrum Cephalicum*. *Miller's Bot. Off.*

Pyrethrum has its Name from πῦρ (*Pyr*), Fire, becauſe of the igneous Heat of its Root: It differs from the *Anthemis*, or *Chamæmelum*, by the Largeneſs of its Flower, and the acrid and fervid Taſte of its Root.

It is imported from the Eaſtern Parts. *Matthiolus* ſays, that it grows on ſome Mountains of *Italy*; but is there leſs acrimonious.

It

It ſtimulates to Venery, cures a Quartan, and gives Relief under an Hemicrania. *Schroder.*

Moriſon, or *Bobart*, affirm this Plant to be the genuine Pyrethrum; for what is eſteemed by ſome the *Pyrethrum verum*, is an umbelliferous Plant. Authors were impoſed upon by a corrupt Reading of *Dioſcorides*, where, in the Deſcription of the Flower, ſome Copies, for ἀνθέμε, erroneouſly ſubſtitute ἀνήθε. *Hiſt. Oxon.* 3. 34.

PYRETHRUM VERUM. Offic. *Pyrethrum ſylveſtre.* Ger. 618. Emac. 758. *Pyrethrum umbelliferum.* C. B. P. 148. Raii Hiſt. 1. 462. *Pyrethrum umbelliferum primum.* Park. Theat. 891. *Pyrethrum umbelliferum Matthioli.* J. B. 3. 20. TRUE PELLITORY OF SPAIN.

The Roots and Leaves are like thoſe of the *Cotula fœtida*; the Umbella is ſupported by a Multitude of Pedicles, proceeding, as it were, from one common Centre, after the manner of the *Pecten Veneris*, or *Anethum*; the Flowers are white, and of a fervid and bitteriſh Taſte; to theſe ſucceed round blackiſh Seeds, larger than Aniſeeds: The Roots are an Inch, and ſometimes two Inches, thick, a Foot in Length, run deep under Ground, are of a brown Colour, inclining to yellow on the Outſide, black within, and of an hot and acrimonious Taſte.

Guilandinus cultivated this Plant in his Garden at *Padua*, and preſented it to *Lobel*, by the Name of the *Pyrethrum verum*. The Pyrethrum of *Cæſalpinus*, which bears a round compreſſed Seed, of the Figure of a Lentil, belongs to another Genus.

The Root of this Pyrethrum is often, and with good Succeſs, held in the Mouth for the Tooth-ach, which it removes, by attracting a Multitude of Humours into the Mouth, together with the Spittle: It excites, therefore, a Salivation, which, perhaps, it would excite in a more plentiful manner, and of longer Duration, if it were taken inwardly, in ſmall and repeated Doſes. *D. Scame e Sylvii Lib.*

Beſides this Species, *Ray* mentions the

PYRETHRUM *umbelliferum alterum.* Park. *Foliis Anethi.* C. B. *Geſneri.* J. B.

It has a long ſimple Root, moderately fibrated, creeping, of the Thickneſs of a Finger, of an hot and burning Taſte; the Leaves are like thoſe of *Anethum*; and the Stalk like that of Fennel, and the Flowers grow in Umbellas exactly circular. *Raii Hiſt. Plant.*

This *Pyrethrum* is cultivated in the Gardens of the Botaniſts, and flowers in Summer.

It is uſed in lethargic Affections, the Palſy, and the like Diſorders. The *Pyrethrum* ſends forth a Stalk and Leaves like the *Daucus Sylveſtris*, or Fennel, and has the circular Umbella of the *Anethum*. The Root is long, an Inch in Thickneſs, and of a very hot Taſte. *Dale* from *Dioſcorides.*

PYRETICA, according to *Blancard*, are Febrifuges.

PYRETOLOGIA, in Pathology, is the Doctrine relative to Fevers.

PYRETOS, πυρετός. A Fever.

A Fever is a very frequent Diſorder, inſeparably attended with an Inflammation, the Cauſe not only of many Diſeaſes and Death, but, alſo, frequently of an happy and ſucceſsful Cure.

As the Nature of this Diſorder is of an highly latent and concealed Kind, ſo we ought the more carefully to guard againſt Miſtakes and Errors in inveſtigating it.

But, in a Reſearch of this kind, Errors are eaſily fallen into, in conſequence of the large Train of Symptoms, with which this Diſorder is generally attended, and without which, however, there may ſtill be a Fever.

That ſuch Errors may be avoided, it is neceſſary, from among numberleſs Symptoms, to ſelect thoſe Phenomena alone, which always accompany every Fever; from the Preſence of which Phyſicians know, that a Fever is preſent; and from the Abſence of which they conclude, that a Perſon is free from a Fever.

Then, from theſe Symptoms and Phenomena, duly diſcovered, and maturely weighed, the particular Nature of the Fever is to be found out.

All Fevers, ariſing from an internal Cauſe, are accompanied with Horripilation, a quick Pulſe, and Heat, at different Times, and in various Degrees of the Diſorder.

The Fever in which the Horripilation, quick Pulſe, and Heat, proceed with Velocity and Danger, is called an Acute Fever.

The Fever, on the contrary, in which theſe three Symptoms proceed ſlowly, either with or without Danger, is called a Slow Fever.

Both theſe Species of Fevers are either common and epidemical, or only affect particular Perſons.

Thoſe are called Acute Febrile Diſorders, which are accompanied with an Acute Fever; whereas thoſe are called Chronical Febrile Diſeaſes, which are attended with a Slow Fever.

Hence it is, that all theſe febrile Diſorders are not to be explained, without a previous Knowledge of the Nature of that Fever with which they are accompanied.

Now the Nature of the attendant Fever is to be eſtimated from the three common Symptoms before-ſpecified; which are, Horripilation, a quick Pulſe, and Heat.

Though theſe three Symptoms are preſent, at ſome time, in every Fever, yet the Velocity of the Pulſe is the only Symptom which continues from the Beginning to the End of the Diſorder, and by which the Phyſician judges, that a Fever is preſent.

In conſequence of this, whatever Knowledge a Phyſician has of a Fever, depends entirely on the Velocity of the Pulſe.

The proximate Cauſe, therefore, of this Velocity of the Pulſe is, in like manner, the proximate Cauſe of the Fever, thus known from its Symptoms.

This Cauſe may, therefore, be a too quick Contraction of the Heart, or a too ſpeedy reciprocal Influx of the nervous Fluid, conveyed from the Cerebellum into the Muſcles and Cavities of the Heart.

Almoſt all Fevers hitherto obſerved, ariſing from an internal Cauſe, *begin firſt with a Senſe of Cold*, Concuſſion, and Horripilation; and this Senſe is greater or leſs, ſhorter or longer, internal or external, according to the Diverſity of Patients, Cauſes, and Fevers.

In the Beginning, therefore, of every Fever ariſing from an internal Cauſe, the Pulſe is quick, ſmall, and frequently intermittent; whilſt there is often a Paleneſs, Coldneſs, Rigor, Tremor, and Inſenſibility of the Extremities.

Hence it is obvious, that in this Period of the Diſorder the ſanguineous Humours become ſtagnant in the Extremities of the minute Veſſels, whilſt, at the ſame time, there is a Cauſe irritating the Heart to a ſtronger Contraction.

From theſe two Circumſtances we diſcover the Cauſe of all the Symptoms which appear on ſuch an Occaſion, and are before enumerated.

In all Fevers where theſe Symptoms have preceded, there ariſes an Heat, which is greater or leſs, ſhorter or longer, internal or external, according to the Diverſity of Fevers.

As this Heat ſucceeds the Fever already produced, it is obvious, the former muſt be rather the Effect, than the Cauſe and Eſſence, of the latter.

Hence, a quick Contraction of the Heart, and an increaſed Reſiſtance of the Capillary Veſſels, are Circumſtances which account for all acute Fevers. Both of theſe Circumſtances may, in a live Animal, be produced by numberleſs and infinitely various Cauſes; and as they may happen either jointly or ſeparately, ſo when one is produced, the other eaſily follows.

For this Reaſon, the proximate Cauſe of a Fever, which conſiſts in the quick Contraction of the Heart, and the increaſed Reſiſtance of the Capillary Veſſels, may itſelf have an almoſt infinite Number of proximate Cauſes, which are either ſingular, and peculiar to ſome Perſons; or univerſal, and common to many: And theſe depend on the State of the Air, the Quality of the Aliments, and the Patient's Method of Life.

The Cauſes, therefore, of a Fever, are either particular, or epidemical.

The proximate particular Cauſes of a Fever may be reduced to five Claſſes; which are, firſt, Acrid Aliments, Drinks, Sauces, Medicines, or Poiſons, when either poſſeſſed of ſuch a Property as that they cannot be digeſted, moved, and evacuated; or when taken in ſuch a Quantity as to irritate, ſuffocate, and obſtruct the Veſſels, by their Putrefaction. Secondly, The Retention of ſuch Things in the Habit as ought to be evacuated, in conſequence of Cold, Unctions, gloomy Diſpoſitions of Mind, improper Aliments, Drinks, Medicines, Poiſons, a cloudy and foggy Air, Eaſe, a Remiſſion of uſual Exerciſes, Obſtructions of the Veſſels by their Contents, or Compreſſions of them by ſurrounding Subſtances. Thirdly, Too much Exerciſe of the Mind, or Body; and acquir'd Heat. Fourthly, External Applications of an acrid, pungent, corroding, lacerating, cauſtic, and inflammatory Nature. And, fifthly, Such Subſtances as induce a great Change in the Humours and their Motion, ſuch as many external and internal Things; Hunger; exceſſive Evacuations; the Pus, Water, and Ichor, in a Dropſy and Empyema; an acrid Serum collected in any Part; an hot State of the Bile; an Inflammation; a Suppuration; a Gangrene; a Cancer; long-protracted Watchings; intenſe Study, of any kind; and exceſſive Venery.

The Effects of a Fever are, a briſk Expulſion and Propulſion of the Fluids; an Agitation of their ſtagnant Parts; a Mixture of all their Particles; a Prevalence over the reſiſting Matter; a Concoction of the Humours; a Secretion of the concocted Parts; and a Criſis of that which, by its ſtimulating and coagulating Quality, produced the Fever; a Change of Health and Soundneſs into a morbid State; a Change of Health into a Diſpoſition fit for bearing thoſe Things to which the Patient was little accuſtomed before; an Expreſſion of the moſt

fluid Parts of the Humours; and an Inſpiſſation of the reſt; Thirſt, Heat, Pain, Anxiety, Weakneſs, Laſſitude, a Senſe of Weight, and Loathing of Food.

The ſooner the Viſcidity of the Juices is reſolved, and the more expeditiouſly the Irritation is allayed, the ſlighter, ſhorter, and more ſalutary, the Fever is; and, on the contrary, it is the more violent, long, and injurious, the longer it is before the Viſcidity of the Humours is reſolv'd, and the Irritation allay'd. Fevers are, alſo, various, according to the ſeveral Degrees and Conjunctions of this Irritation and Viſcidity.

Hence it is, that Fevers often exert the ſame Efficacy with Medicines, with reſpect to other Diſeaſes.

Hence, alſo, the Beginning, Increaſe, Height, Decreaſe, Criſis, Change, and Cure of Fevers are various, in acute and particular Fevers.

A Fever terminates in Death, ſome other Diſorder, or in Health.

It terminates in Death, when the Solids are deſtroyed by a Force acting too ſtrongly on them; or when the Fluids are ſo depraved and peccant, as to obſtruct the vital Veſſels, or thoſe through which new Fluids ought to be conveyed, in the room of thoſe loſt. Hence ariſe Inflammations, Suppurations, and febrile Gangrenes, in the vital Viſcera, the Heart, Lungs, and Cerebellum; or aphthous Ulcers in the Primæ Viæ, the frequent Cauſes of Death in Fevers.

A Fever terminates in other Diſeaſes, when either, by a too violent Agitation, it injures the Veſſels, and, diſſipating the more fluid Parts of the Humours, inſpiſſates the reſt; or when, by a too weak Action, it is unable, by its Force, to reſolve the coagulated Parts of the Fluids; or when it depoſites the critical Matter in ſome obſtructed, dilated, or ruptured Veſſels. Hence ariſe red Spots, Puſtules, Eryſipelas, Meaſles, Small Pox, Phlegmons, Bubos, Inflammations of the Parotid Glands, Abſceſſes, Gangrenes, Sphacelus, and Scirrhus.

A Fever terminates in Health, firſt, When by its Force it ſubdues, reſolves, renders moveable, and carries off, by inſenſible Perſpiration, the material Cauſe of the Fever; and, at the ſame time, checks its Impetus, by reſtoring an equable Circulation. This univerſal Reſolution almoſt reſembles the Reſolution in the Inflammation of a particular Part. Secondly, A Fever terminates in Health, when the Matter of the Diſeaſe, being, by the Force of the Fever, ſubdued, reſolved, and rendered moveable, yet retains a certain Quality, by which it reſiſts the equable Circulation of the Blood, ſtimulates the Veſſels, and, by exciting ſome ſenſible Evacuation, is expelled. Hence Sweat, a Diſcharge of the Saliva, Vomiting, a Diarrhœa, and copious Diſcharge of Urine, happen critically, after the Concoction of the Matter, and the State of the Diſeaſe, generally within fourteen Days.

A Fever, alſo, terminates in Health, when the Matter of the Diſeaſe being, by the Force of the Fever, ſubdued, reſolved, rendered moveable, and again aſſimilated with the ſound Humours, circulates without any Criſis, or the Induction of any other Diſeaſe.

The Genius, Difference, and Duration, of Acute Fevers, when obſerved from the Beginning, through the Increaſe to the Height of the Diſeaſe, enable us to prognoſticate its Event, ſeveral Changes, and final Termination.

From all the Circumſtances, therefore, already enumerated, the general Diagnoſtics and Prognoſtics of Fevers may be eaſily deduced.

The general Cure of Fevers is moſt effectually obtained, firſt, By preſerving and ſupporting that Strength on which Life depends. Secondly, By correcting and expelling the acrid irritating Matter. Thirdly, By diſſolving and expelling the viſcid Juices. And, fourthly, by mitigating the Symptoms.

The Strength on which Life depends, is ſupported by Aliments and Drinks of eaſy Digeſtion, oppoſite to Putrefaction, allaying Thirſt, fit for increaſing the Appetite, and contrary to the known Cauſe of the Diſorder.

The Aliments are to be exhibited at the time the Fever is abſent, or, at leaſt, when its Force is leaſt.

The Aliments are to be exhibited in a ſmall Quantity, tho' at frequently repeated Intervals, leſt the Viſcera ſhould be oppreſſed, or a Change induced on them.

The Quantity and Quality of the Aliments are to be eſtimated and determined, firſt, From the Probability of the Duration of the Fever, whether for one, four, ſeven, nine, eleven, fourteen, twenty-one, thirty, forty, or ſixty Days; for as much Aliments ought to be exhibited as are ſufficient for ſupporting the Strength, and rendering it fit for the Purpoſes of Concoction, and a Criſis: The ſhorter the Diſeaſe, the leſs and the weaker the Aliments ought to be; whereas the longer the Fever, the more and the ſtronger they ought to be. Secondly, From the Age of the Patient; for the younger and the older Perſons are, with the greater Difficulty they bear Hunger. Thirdly, The Height and Vehemence of the Diſorder, when known, require Aliments of various Virtues, and exhibited in different Quantities. In the Height, a ſmall Quantity of light Aliments are to be uſed; but, in the Increaſe and Decline, the more and the ſtronger the Aliments ought to be, the more the Diſeaſe is diſtant from its Height. Fourthly, From the Place in which the Patient lives: For thoſe who live near the Equator, commodiouſly bear light Food, which does not ſo well agree with thoſe who live near the Poles. Fifthly, From the Seaſon of the Year; becauſe the Summer requires light, and the Winter ſtronger Aliments. Sixthly, From the Cuſtom and natural Conſtitution of the Patient: For the Perſon who, when in a State of Health, uſing delicate Aliments, has them eaſily diſſipated, requires a pretty large Quantity of Aliments, becauſe the Veſſels and Viſcera were accuſtomed to them before. And, ſeventhly, From the Senſe of Lightneſs or Weight ſucceeding the Uſe of the Aliments.

Any external irritating Subſtance, ſuch as the acute Fragments of Glaſs, Metal, Wood, Stone, and Bones, ſtimulating, corroding, veſicating, cauſtic, ſeptic, and poiſonous Subſtances, or ſuch as produce a Redneſs of the Parts, are, with all Expedition, to be removed; and the Parts in which ſuch Subſtances were lodged, and are injured by them, are to be fomented with viſcid, mucous, mild, oleous, anodyne, and gently aperient Fomentations. Thus,

Take ſix Quince-ſeeds; and of the diſtilled Waters of Roſe and Elder-flowers, each three Ounces: Make into an Emulſion, to which, when pure, add half an Ounce of rectified Spirit of Wine, and one Dram of the Tincture of Opium.

This Intention is, alſo, anſwered, by the Unguentum Aureum, Baſilicon, Diapompholygos, the Unguentum Nutritum, Ointment of Poplar, and Ointment of Roſes.

The acrid irritating Subſtance lodged internally, ſuch as the Acrimony of an Inflammation, Suppuration, Gangrene, Sphacelus, Cancer, carious Bone, Ichor, Pus, and acrid or ſtagnant Lymph, is to be removed, or corrected, by the Methods preſcribed under their reſpective Articles.

An acrid irritating Quality, induced on the Fluids, may and ought to be corrected by the Uſe of the ſix Nonnaturals, and various Remedies adapted to the known State and Nature of the Diſorder. This Intention is excellently anſwer'd,

Firſt, By Reſt, both of the Body and Mind; Abſtinence from too much Exerciſe; by moiſtening, diluting, mild, and lenient Subſtances, ſuch as Ptiſans, and laxative Decoctions.

Secondly, By temperating the exceſſive Heat of the Air, by cooling Exhalations, eſpecially thoſe of Plants proper for this Purpoſe; by drinking ſubacid, gently-nitrated Water, with a ſmall Quantity of ſubacid Wine; by ſubacid, gently demulcent, and a little ſalted, Aliments; and by Medicines of a ſimilar Nature. Thus,

Take of the Decoction of Barley, twenty-five Ounces; of pure Nitre, one Dram; of Rheniſh-wine, ſix Ounces; of the Robs of Currans, and Elder, each two Ounces: Mix all together, and let the Patient take an Ounce or two every Quarter of an Hour.

Take of the diſtilled Waters of Succory, Fumitory, and Baum, each three Ounces; of the Spirit of common Salt, one Dram; of the Syrup of Mulberries, two Ounces; and of pure Nitre, half a Dram: Mix all together, and let the Patient take a Spoonful every Half-hour.

Take of the Cryſtals of Tartar, two Drams; and of pure Nitre, half a Dram: Reduce to a Powder, of which let the Patient take half a Scruple every three Hours, in ſome proper Ptiſan.

Thirdly, By correcting the exceſſive Moiſture of the Air, by large Fires of aromatic and reſinous Woods, and by the Exhalations of aromatic Subſtances. Thus,

Take of the recent Herbs of Marjoram, curled Mint, Origanum, and Roſemary, each two Handfuls; of the Flowers of *Roman* Chamomile, red Roſes, Tanſey, and Lavender, each one Handful; of *Syrian* Marum, half an Handful; of the Roots of *Florentine* Oris, Garden Angelica, and Maſterwort, each three Ounces; of the Shavings of Saſſafras, two Ounces; and of bruiſed Celeri-ſeeds, three Ounces: Cut all down, and reduce to a Powder, to be ſprinkled in the Room where the Patient is.

Fourthly, By correcting the putrid State of the Air, by throwing Nitre, Gunpowder, Vinegar, and Salt, upon live Coals.

Fifthly,

Fifthly, If a Fever is excited by Affections of the Mind, the Paſſions of the Mind are to be regulated by Reaſon, and contrary Affections; by Variety of Objects, Anodynes, and Opiates.

Sixthly, When a Fever proceeds from acrid acid Aliments, this Acrimony is to be diluted, check'd, abſorb'd, and changed into a compound Salt; and this Effect is produced by the aqueous and gelatinous Parts of Animals, by oleous and cretaceous Subſtances, Shells of Fiſhes, Crabs-eyes, pinguious Earths, alcaline, fixed, volatile, ſimple, and compound Salts.

Seventhly, When the Fever ariſes from acrid ſaline Aliments, this Acrimony is to be diluted by aqueous Medicines, and evacuated at the ſame time; tempered by mild oleous Medicines, and corrected by lixivious Preparations of Quick-lime.

Eighthly, When the Fever proceeds from acrid, aromatic, and heating Aliments, the Acrimony is to be diluted by aqueous Fluids, corrected by Acids, reſolved and deterged by ſaponaceous Acids, and tempered by mild glutinous Subſtances. As alcaleſcent acrid Subſtances belong to this Claſs, ſo we hence learn the Method of treating Fevers produced by them.

Ninthly, When a Fever is produced by the alcaleſcent Parts of Animals, it is to be cured by the Meaſures directed under the Article ALCALI.

Tenthly, When a Fever proceeds from too large a Quantity of Aliments, or the uſe of ſuch as conſtrict the Stomach, it is to be cured by Dilution, Faſting, Vomiting, and rendering the Body ſoluble. Gentle Vomits may be prepared, in the following manners:

Take of light Barley-water, thirty-ſix Ounces; of Oxymel of Squills, three Ounces; and of vitriolated Tartar which is not acid, two Drams: Mix, and let the Patient take two Ounces every Half-hour. Or,

Take of the Rob of Elder, three Ounces; Vinegar of Squills, one Ounce; and diſtil'd Baum-water, ſix Ounces: Mix all together, and let the Patient take half an Ounce every Half-hour. Or,

Take five Grains of Emetic Tartar, for one Doſe. Or,

Take one Ounce and an half of Emetic Wine for a Doſe. Or,

Take of white Ipecacuana-root, one Scruple: Reduce to a Powder, to be taken for one Doſe. Or,

Take of the Powder of Ipecacuana-root, four Scruples; and of White-wine, three Ounces: Boil in a long Phial, for four Hours; and exhibit the Liquor, when ſtrain'd, for one Doſe. Or,

Take five recent Leaves of Aſarabacca, cut down; pour upon them boiling Water; let them infuſe for half an Hour; and exhibit the expreſs'd Juice for one Doſe.

Eleventhly, A Fever brought on by acrid, fermented, or fermenting Liquors, acid, oleous, aromatic, or diſtil'd Fluids, or a ſimple Acrimony, is to be removed by the ſame Remedies with thoſe mentioned above in N° 5. 6. and 8.

Twelfthly, A Fever ariſing from exceſſive Watching is cured by the ſame Methods with thoſe recommended above in N° 1, 2. and 5.

Thirteenthly, If a Fever ariſes from an alcaline, acid, oleous, or ſaponaceous putrid Acrimony, contracted by a Retention of the excrementitious Humours, theſe muſt be rendered moveable, their Paſſages muſt be lubricated, and their proper Emiſſaries opened; mean time, the vital Powers, which expel them, muſt be ſtimulated, and augmented: And this is to be done both by internal and external Remedies.

The principal excrementitious Humours, which, if retained, are capable of exciting a Fever, are the Faeces of the Belly, the Urine, the Lochia, the hæmorrhoidal Blood, and the perſpirable Matter.

The Emiſſaries are opened by reſolving the Matter fixed therein, and by relaxing the obſtructed Emiſſaries: This is done by Baths, Clyſters, Frictions, Abraſions of the Hairs, and cleanſing of the Skin.

What ſtagnates at the Extremities of the conical Veſſels, on account of too great a Quantity of Blood, by which the Veſſels are compreſſed, is reduced to a State of Fluidity, by diminiſhing the Quantity of Blood by Veneſection; and we learn, that this is the Caſe, by the Signs of a PLETHORA, ſpecified under that Article.

What adheres to the Extremities of the Capillary Veſſels, on account of ſpaſmodic Contractions of their Fibres, by which their Capacities are diminiſhed, is reſolved by relaxing the Fibres, and removing the Acrimony which cauſes their Contraction; for the Methods of doing which, ſee the Articles FIBRA, and OBSTRUCTIO.

What adheres on account of its own Viſcidity and Lentor, is reſolved by various Remedies, the principal of which conſiſts in a due Moderation of the Fever itſelf, in ſuch a manner, that by means thereof the Coagulation may be reſolved. It is, therefore, neceſſary to regulate the Fever in ſuch a manner, firſt, that no Inflammations, Suppurations, Gangrenes, or Sphacelations, may be produced; the Danger of which is evinced, by the Violence of the Symptoms, particularly Heat, compared with the Strength of the vaſcular Syſtem.

Secondly, That the moſt fluid Parts of the Blood may not be diſſipated by too violent a Motion thereof; the Signs of which Diſſipation are, a Dryneſs of the Noſtrils, Eyes, Throat, and Tongue; an Hoarſeneſs, a Dryneſs of the Skin, a diminiſhed Excretion of Urine, and a ſmall, quick, and unequal Pulſe.

Thirdly, That, before the Concoction of the febrile Matter, the Fever may not languiſh too much, ſo as to be incapable of ſubduing, moving, ſecreting, and excreting the Cauſe of the Diſeaſe. This State is diſtinguiſhed by an univerſal Languor of all the vital Actions, before the Signs of Concoction appear.

In caſe the febrile Motion is exorbitant, (*See the Diſſertation on Diſorders ariſing from an Exceſs of the Circulation, under the Article* SANGUIS), it muſt be moderated by Abſtinence, or an extremely thin Diet, by aqueous Drinks, by a ſomewhat cool Air, by calming the Paſſions of the Mind, by Veneſection, refrigerating Clyſters, and by mild, aqueous, glutinous, refrigerating, anodyne, and opiate Medicines.

Refrigerating Clyſters may be prepared in the following manner:

Take of pure Nitre, two Drams; of Honey of Roſes, one Ounce; and of recent Whey, twelve Ounces: Mix for a Clyſter. Or,

Take of common Vinegar, one Ounce; of Native Nitre, three Drams; of ſolutive Syrup of Roſes, with Sena, two Ounces; and of a Decoction of Barley, twelve Ounces: Mix for a Clyſter. Or,

Take of Butter-milk, ten Ounces; and Syrup of pale Roſes, two Ounces: Mix up, for a Clyſter. Or,

Take of the common emollient Decoction, eleven Ounces; of pure Nitre, three Drams; and of Honey of Mercury, one Ounce and an half: Mix for a Clyſter.

If the Fever is too languid, it muſt be raiſed by a cardiac Regimen, conſiſting of the more generous Sorts of Food and Drink; by reſpiring a ſomewhat warm Air; by exciting the Paſſions of the Mind; by acrid, volatile, aromatic, fermented Medicines; by Frictions, Heat, muſcular Motion, Baths, and Fomentations.

FORMS OF MEDICINES IN A FEBRILE LANGUOR.

Take of Oxymel of Squills, three Ounces; of *Matthiolus's* Spiritus Vitæ, three Drams; of diſtilled Mint-water, four Ounces; and of diſtilled Cinnamon-water, one Ounce: Mix all together, and let the Patient drink an Ounce every Hour.

Take of the Diaſcordium of *Sylvius*, one Scruple and an half; of the Theriaca Andromachi, one Dram and an half; of the Syrup of the Five aperient Roots, two Ounces; and of the diſtilled Water of Carduus Benedictus, ſix Ounces: Mix all together, for the ſame Uſe.

Take of the Confection of Alkermes, one Dram; of candied Ginger, ſix Drams; of the Roots of Contrayerva, and *Virginian* Snake-root, each one Dram; and of the Syrup of the Five aperient Roots, a ſufficient Quantity for making a Conſerve: Of which let the Patient take half a Dram every four Hours.

Take of the Counteſs of *Kent's* Powder, one Scruple and an half: And exhibit it for a Doſe every four Hours.

Take of White Ginger, *Winter's* Bark, of the Roots of Zedoary, Contrayerva, and *Virginian* Snake-root, each one Dram; and of the Troches of Vipers, two Drams: Reduce to a fine Powder, to be divided into Doſes of one Scruple and an half; one of which is to be taken every four Hours.

Take of the Salt of Carduus Benedictus, half a Dram; of burnt Hartſhorn, one Dram; of red Coral, two Scru-

ples; and of the diſtilled Oils of Cinnamon, and Citron-peel, each three Drops: Reduce to a Powder, to be divided into ten Doſes, for the ſame Uſe.

Next to the due Regulation of the febrile Motion, the moſt important Remedy againſt the Viſcidity of the Juices is, the Reſtitution of the elaſtic Force of the Veſſels, by diminiſhing the Quantity of Fluids, by copious Veneſection, performed with Expedition, and from a large Wound; and immediately after, or at the ſame time, increaſing their Motion by ſtimulating Remedies.

Laſtly, The viſcid Juices are render'd fluid, by diluting with aqueous Drinks, Baths, Fomentations, and Clyſters; uſing, at the ſame time, Fricions. And theſe have a much better Effect, if taken warm; if reſolvent Salts, as Nitre, are mix'd in a due Proportion with the aqueous Fluids; and if gently aromatic, bitter, and lacteſcent cooling Vegetables are boiled in them.

The bitter lacteſcent cooling Vegetables hinted at by the Author, are the

Chondrilla. Gum Succory.
Cichorea. Succory.
Hieracia. Several Species of Hawkweed.
Intubus. Endive.
Lactuca. Lettuce.
Scorzonera. Vipers-graſs.
Sonchus. Sow-thiſtle.
Taraxaca. Several Species of Dandelion.
Tragopogon. Goats-beard.

But, that theſe may operate well, expeditiouſly, ſafely, and with Efficacy, Veneſection is to precede their Uſe; for this facilitates their Ingreſs, their Mixture with, and Action upon, the Blood.

So ſoon as, by theſe Remedies, the morbid Viſcidity is diſſolved, by a Continuation of the ſame, and ſometimes augmenting their Actions, it is forced through the Veſſels, and expelled: Sometimes, however, it may be ſo far ſubdued and amended, as to be rendered ſimilar to the healthy Juices, and require no Expulſion.

The uſual Symptoms, accompanying an acute Fever, are, Cold, Tremors, Anxiety, Thirſt, Nauſea, Eructations, Vomiting, Weakneſs, Heat, Exeſtuation, Dryneſs, Delirium, Coma, Watchings, Convulſions, Sweats, Diarrhœas, and inflammatory Puſtules.

All theſe Symptoms ariſing from, and cauſed by the Fever, ceaſe ſpontaneouſly, when that is removed: For this Reaſon, they require no particular Method of Cure, provided they can be ſupported without endangering Life, till the Termination of the Fever.

But it muſt be remarked, that theſe Symptoms frequently ariſe from an Attempt of the vital Powers to form a Criſis, and expel the critical Matter; and then they precede, accompany, and follow the Criſis; in which Caſes, nothing muſt be done to moderate them, which can in any Degree interfere with the ſalutary Work carrying on.

But if any of theſe Symptoms are unſeaſonable, or too ſevere to be ſupported without the Hazard of Life; if ſo troubleſome, as to render the Patient inſupportably uneaſy; or if there is Danger of their producing ſome more formidable Diſorder; in ſuch Caſes they muſt be mitigated by Remedies adapted to them; always having due Regard to the Cauſe and State of the original Diſtemper.

FEBRILE SYMPTOMS; and firſt of

FEBRILE COLD.

Cold, in the Beginning of Acute Fevers, ariſes from a decreaſed Attrition of the Liquids with each other, and with their reſpective Veſſels; a Diminution of the circulatory Motion; a Stagnation of the Liquids at the Extremities of the Veſſels; a diminiſhed Contraction of the Heart, and only a partial Evacuation of its Ventricles; and a leſs copious Influx of the Spirits conveyed from the Cerebellum.

This Cold, if of long Duration, cauſes polypoſe Concretions in the larger Veſſels near the Heart; and in the ſmall Veſſels an Evacuation of the Fluids they ought to contain, in conſequence of their Contraction; and in both theſe Caſes many and ſevere Diſorders are excited.

Hence the Reaſons are evident, why intenſe Coldneſs, in the Beginning of Acute Fevers, is of very bad Preſage; why the Fever is dangerous, in Proportion to the Cold perceived upon its firſt Attack; and why, in the Beginning of the Plague, an exceſſive Senſation of Cold is ſucceeded by as exceſſive a Degree of Heat.

If any Attempts are made to remove the Coldneſs in the Beginning of Acute Fevers, by any Remedies which ſtimulate briſkly, under whatever Denomination, a Foundation is frequently laid for an incurable Inflammation in the Sequel. For this Reaſon, all kinds of acrid ſaline Medicines, aromatic and oleous Subſtances, and Veſicatories, are to be condemned, in theſe Caſes, as highly pernicious.

But a much more ſafe, and effectual Method of Cure, may be purſued, by exhibiting warm aqueous Drinks impregnated with Nitre, a little Honey, and Wine; by Baths, Vapours, Fomentations, and Lotions, made of the ſame Sorts of Liquors; and by moderate Fricions: For theſe, applied at firſt, are capable of curing and preventing very great Diſorders.

Take of Barley-water, thirty Ounces; of pure Nitre, two Drams; of ſimple Oxymel, three Ounces; and of diſtilled aromatic Clove-water, two Ounces: Mix all together, and let the Patient, every Quarter of an Hour, drink two Ounces, pretty warm.

Take of the Four greater and leſſer cold Seeds, each two Drams: Make into an Emulſion with Water, with three Pints of which mix of diſtilled Fennel-water, four Ounces; of Sal Prunellæ, two Scruples; of the Syrup of the Five aperient Roots, two Ounces; and of the Syrup of Violets, half an Ounce: To be exhibited for the ſame Purpoſes with the other.

Take of diſtilled Borage-water, one Pint; of the diſtilled Water of Roſe-flowers, one Ounce; of diſtilled Elder-flower-water, eight Ounces; of Diſtilled Cinnamon-water, one Ounce and an half; of *Matthiolus*'s Spiritus Vitæ, half an Ounce; and of *Fernelius*'s Syrup of Mugwort, two Ounces: Mix all together, and exhibit for the ſame Uſe.

Coffee, Decoctions of Saſſafras and Sanders, together with others of a like Nature, are of ſingular Service in the cold Fit, eſpecially if towards the End of their Preparation a ſmall Quantity of ſome aromatic Subſtance is added. Thus,

Take of the White, Yellow, and Red Sanders, each one Ounce: Boil in Water for a Quarter of an Hour: Then add, of the Roots of Fennel, four Ounces; of the Shavings of Saſſafras, two Ounces; and of Liquorice, half an Ounce: Let them boil for a Moment, and ſtrain off four Pints; for the ſame Uſe with the others. *Boerhaave.*

PROGNOSTICS FROM COLDNESS IN ACUTE DISEASES.

A *Coldneſs* of the Body, which may rather be called a *Coolneſs*, or moderate *Heat*, after ſome good Evacuation, by which the Pulſe is rendered better, and ſtronger, is a very good Sign, as it indicates a critical Solution of the Fever: That *Coldneſs*, alſo, which is the Conſequence of refrigerating or allaying the Heat of a Fever, and is attended with Signs of Concoction in the Urine, Spit, or Stools, (where the Diſeaſe has affected the Nervous Syſtem, ſpirituous Parts, or Belly) and an Alteration of the Pulſe for the better, is a very good Symptom, and ſignifies a ſafe and ſpeedy Return of Health. A *Coldneſs*, alſo, is ſometimes obſerved to be critical, or preceding a very good Criſis.

Though a *Coldneſs* thus qualified, as before deſcribed, is to be eſteemed ſalutary; yet it rarely happens that we can draw any good Prognoſtic from a *Coldneſs* of the Body. This *Coldneſs*, to proceed, is obſerved either in the whole Body, or in the external Parts; in continual Fevers it is generally mortal, but in very robuſt Conſtitutions it portends not Death, but the long Continuance of the Diſeaſe. Under great Weakneſs it is always mortal, that is, where the Diſeaſe has been great and violent; when it is the Conſequence of an Extinction of the Faculty, it ſhews Death to be very near: But that it proceeds from ſuch a Cauſe, will be indicated by other preceding deſtructive Signs.

Some who labour under an Anaſarca, but eſpecially under an Aſcites and Leucophlegmatia, have a *Coldneſs* almoſt of the whole Body; and the ſame is obſerved in Perſons affected with inward Suppurations when dying; ſuch have a *Coldneſs* or Chilneſs in almoſt every Part, either from an extraordinary Reſolution of the natural Heat, or a Redundance of cold Humours.

A *Coldneſs*, however, of this Nature, in the extreme Parts, affords not always ſure Grounds for Prognoſtication; for in ſome Patients, not under any acute Diſtemper, ſuch a *Coldneſs* is not much to be feared. In Diſeaſes, ſays *Galen*, not attended with a Fever, which happen in Winter, and to old Perſons, for the extreme Parts of the Body, as the Ears, Noſe, Feet, and Hands, to be cold, is not at all ſurpriſing; ſince, as he atteſts, in his ſecond Comment on the *Prognoſtics*, thoſe Parts are naturally bare of Fleſh, and, alſo, at a great Diſtance from the Viſcera.

But a *Coldneſs* of this Sort, in Acute Diſeaſes, is no ſmall Evil; for, by means hereof, through Weakneſs, the natural Heat is prevented from penetrating to the extreme Parts of

the Body; beſides, under acute Diſorders, through the Violence of the Inflammation infeſting the Viſcera, the Blood is diſtributed but in ſmall Quantities over the Body. In theſe Kinds of Diſorders, therefore; for the Body to be cold, and chilled, and not only in the Extremities; but in every Part together, is very pernicious; unleſs occaſioned by the Approach of a Fit; for it indicates the natural Heat to be either extinguiſhed, or to labour under a Suffocation from the Multitude of Humours; but ſuch a *Coldneſs* is attended with many other mortal Signs: Many dying Perſons appear cold, with Deſudations, or cold Sweats, and an extreme Languor; and they appear not only to be exceſſively cold, but, alſo, hard; whence we read, 1 *Prorrhet.* 77. "That a Refrigeration with an "Hardneſs, is a deſtructive Sign." But we ſhall proceed to examine more accurately into the Prognoſtics, *which may be drawn particularly from a Coldneſs of the extreme Parts.*

Of Prognostics from a Coldness of the extreme Parts of the Body.

The extreme Parts of the Body; which *Hippocrates* in his *Prognoſtics* calls the *Head*, *Hands*, and *Feet*; *Galen* on 7 *Aph.* 1. more diſtinctly; the *Noſe*, *Ears*, *Hands*, and *Feet*, are affected with a *Coldneſs* in acute Diſeaſes, when the natural Heat is either contracted, reſolved, oppreſſed; or ſuffocated, or, in the laſt place, extinguiſhed. The natural Heat is contracted inwardly to the Viſcera, relinquiſhing the extreme Parts of the Body, and poſſeſſing the middle Parts, the Thorax, and the Belly, either on account of a violent Inflammation, or Eryſipelas, affecting the Viſcera, and, as *Galen* ſays, by its Heat attracting the Blood, in manner of a Cupping-glaſs, to the affected Part, or from a ſevere Pain in the Stomach, or its Mouth, or in the Colon, ſmall Inteſtines, Uterus, or Kidneys; or, laſtly, on occaſion of the Fit, when Nature is at Work in the internal Parts, and makes its utmoſt Efforts to expel the redundant Humours with which it is oppreſſed; from which we prognoſticate ſometimes Death, ſometimes Recovery, according to the preſent extraordinary Degree of Strength or Weakneſs of the Patient.

The natural Heat is reſolved, either by the Violence of the febrile Eſtuation, or ſome vehement Pain, or immoderate Evacuation, or ſome poiſonous Juice offending the Heart, and the Mouth of the Stomach, or by a ſudden and immoderate Fit of Mirth.

The natural Heat is oppreſſed or ſuffocated in the Viſcera, whence the remote Parts, being left deſtitute of their wonted Supplies of Heat, are refrigerated; when the Mouth of the Stomach is either overloaded with an immoderate Quantity of Food, or ſtrongly vellicated by mordacious Humours, as *Galen* expreſſes it, *Com. in Lib. de R. V. I. A.* or when, the Viſcera are infeſted with a Multitude of corrupt or crude Humours, by which the natural Heat is either ſuffocated, or remarkably oppreſſed, in the ſame manner as when by heaping great Quantities of green Wood upon a Fire, the ſame is ſo far from being increaſed, that it is quite ſuffocated, or, at leaſt, much diminiſhed, by ſo doing. Thus is the Heat ſhut up, and confined, within the Viſcera by the Redundance and Coacervation of the Humours, ſo that it cannot penetrate or expand itſelf to the exterior Parts; the Veins and Arteries, by which it was diffuſed from the Viſcera, being obſtructed by thoſe crude or corrupt Humours. A Fever proceeding from ſuch a Cauſe is, by ſome, called *Lipyria*, [λειπυρία, λιπύριον, λιπυρεῖν] by others, *Aſaphodes*, that is, obſcure and latent [ſee Asaphes]; by others is deſcribed as mild and gentle externally, but violent and tumultuous within: The Reaſon is, becauſe the Fever owes its Original to a Multitude of putrid Humours, or a Redundance of cold, crude, and groſs Humours, by which the Heat is ſuffocated; or to a Phlegmon affecting the Viſcera, or to a malignant and poiſonous Putrefaction; in all which Caſes there is a *Coldneſs*, or, at leaſt, a Coolneſs, and Abſence of Heat, in the extreme Parts.

The natural Heat is not only deſtroyed or diminiſhed by Strangulation or Suffocation, but is even extinguiſhed by an intenſe *Coldneſs*, or an occult poiſonous Quality, by which the vital Parts are corrupted; as may be obſerved in the Effects of cold Poiſons, and ſuch things as are mortal from a Property inherent in their whole Subſtances, as *Galen* expreſſes it.

Again, the natural Heat, which has its Seat in the ſolid Parts, according to *Galen*, may be waſted, reſolved and diſſipated, by a greater or flammeous Heat conſuming the humid Parts, by which the natural Heat itſelf is preſerved, and lives. Thus it happens in hectic Diſorders, and under violent Pains of the Viſcera, by which the natural Heat of thoſe Parts is corrupted and reſolved; on which account, *Hippocrates* had Reaſon to pronounce, 7 *Aph.* 26. a Coldneſs of the extreme Parts, under a violent Pain in the Parts of the Region about the Belly, a bad Sign.

In the laſt place, a *Coldneſs* may be generated, or Heat be deſtroyed, by an immoderate Evacuation, either ſpontaneous, or procured by Art; the Conſequence of which, when extreme, is a mortal Syncope; in which the Patient dies under a *Coldneſs* of the extreme Parts: And the Symptom is occaſioned by a Reſolution of the Heat from opening an Artery.

We have hitherto been employ'd in examining into the Cauſes of this *Coldneſs*, or Extinction or Diminution of Heat, in the extreme Parts, and proceed now to the Prognoſis, or Signs, afforded by it for our Obſervation; from whence we may predict a good or bad Event in an acute Diſeaſe.

In the firſt place, then, a *Coldneſs* of the extreme Parts, when Nature makes Attempts towards a Criſis, with other good Signs, muſt be eſteemed ſalutary. But at the periodical Return of a Fit, or under a long Diſeaſe, ſuch a *Coldneſs* affords no certain Prognoſtic; neither is it to be accounted a mortal Sign in old Perſons, and in the Winter-ſeaſon.

"A *Coldneſs* of the extreme Parts (with the before-mentioned Exceptions) in acute Diſeaſes is, as *Galen* ſays, *Com.* "*in 7 Aph.* 1. no ſlight Diſorder, but a very pernicious Symptom, as it is the Conſequence of a violent Inflammation of "the Viſcera." But here we are to except, alſo, a *Coldneſs* of the Extremities from unſeaſonable Eating, and what is occaſioned by a Paroxyſm, in which, ſays *Galen* on the *Prognoſtics*, not only the extreme Parts, but the Skin about the Ribs and Belly, are rendered cold.

A *Coldneſs* of the extreme Parts ſometimes begins at the ſame time with the Diſeaſe; and this Symptom was obſerved by us one Year in many wandering malignant Fevers, which derived their Original either from a moſt intenſe Degree of Putrefaction, by which the Viſcera are affected, as it were, with Poiſon, and the natural Heat on that Account very much reſolved, or elſe retracted inwards, or almoſt ſuffocated by the Redundance of the highly putrid Humours; or, which is the laſt Account to be given for it, the Fever was kindled up, and took its Riſe, from crude and pituitous Humours, as we obſerve in a *Febris Amphemerina*, or Quotidian.

A *Coldneſs* of the Extremities, in continual Fevers, is always bad, and imports Death, or Malignity, but moſt commonly Death. When this Symptom appears in the Beginning, together with the Fever, and not in an exraordinary Degree, it foreſhews only a Malignity, and is accounted by Phyſicians a pathognomic Symptom of malignant Fevers, in which the Patient is often not very thirſty, nor has his Tongue very much dryed; and this *Coldneſs* is ſometimes equal, or of one Temperature, during the whole Courſe of the Diſeaſe, and ſometimes unequal, or more or leſs increaſed and diminiſhed.

A *Coldneſs* of the extreme Parts, not in the Beginning of the Diſeaſe, but on a critical Day, with critical Signs, indicates a Criſis, or a Change of a continual Fever into an Intermittent. But an intenſe *Coldneſs* of the Extremities, and of long Duration, with bad Signs, is always bad, and worſt of all on a critical Day.

An almoſt invincible *Coldneſs* of the extreme Parts is a mortal Symptom: And this is confirmed by *Hippocrates* in his Obſervations, 1 *Epid. Sect.* 1. on a very mortal epidemic Fever, in which the Patients, he ſays, "were very ſubject to Refri-"geration of the extreme Parts, into which it was very diffi-"cult to recal the Heat." And by what he tells us, 3 *Epid. Sect.* 3. in his Account of the Symptoms of an epidemic, and very malignant burning Fever, among which was "a remark-"able Coldneſs of the Extremities of the Feet and Hands, "and eſpecially about the time of the Paroxyſms, into which "Parts the Heat returned but by ſlow Degrees, and not in a "kindly manner." To the ſame Purpoſe he ſays, of ſome who died of a Tabes, that, towards their End, "they were "much affected with Coldneſs, and were hardly capable of "receiving Heat." In *Prorrhet.* 65. we read, that "Refri-"gerations after a Rigor, which are not ſucceeded by a Re-"turn of Heat, are bad." Thus they proved, for Inſtance, in the Caſe of *Philiſcus*, 1 *Epid. Sect.* 3. *Ægr.* 1. "whoſe "extreme Parts [the Day before he died] were cold on every "Side, and never recovered any Heat afterwards." The ſame happened to *Silenus*, *ibid. Ægr.* and others mentioned in the *Epidemics*, not long before their Death.

In Perſons very near Death, there is obſerved a *Coldneſs* of the extreme Parts equal to that of a Marble-ſtone, and often attended with an Hardneſs and Lividneſs. Now an Hardneſs, with an intenſe Degree of *Coldneſs*, is accounted a mortal Sign, as we read 1 *Prorrhet.* 77. on which *Galen* ſays, "If the Cold-"neſs be ſo intenſe as to cauſe a total and abſolute Refrige-"ration, with an Hardneſs, it is a Sign of Extinction," or that the natural Heat is extingniſhed.

A *Coldneſs* of the extreme Parts, attended with a Lividneſs, is no leſs mortal; for this latter is of all Symptoms the moſt pernicious, and ſhews Death to be at the Door. For a livid Colour

Colour in thoſe Parts indicates an Extinction of the natural Heat, as we are taught by *Galen*, who, in his Comment on the third Epidemic, tells us, that a *Coldneſs* of the extreme Parts, attended with a Lividneſs, is an evident Sign of Death. And this is confirmed by *Hippocrates*, *Lib. Prognoſt.* where it is ſaid, that, "If, beſides this dead Heavineſs of the Body, [before "mentioned] there be, alſo, a Lividneſs of the Nails and "Fingers, nothing is to be expected but immediate Death." And, in what follows, we read, "That for the Fingers and "Feet to be quite black, is leſs pernicious than for them to "be livid;" and not without Reaſon, ſince a Lividneſs of theſe Parts always proceeds from an Extinction of the natural Heat, but a Blackneſs is not always from that Cauſe; for it may be owing to a black Humour ſettled in thoſe Parts. We may conclude, therefore, that if to a *Coldneſs* of the extreme Parts there accedes a Lividneſs of the ſame, it is a moſt mortal Symptom, and ſhews Death to be near at hand. This we have abundantly confirmed by *Hippocrates* in his firſt and third *Epidemics*, by Inſtances in *Philiſcus*, *Silenus*, the Woman who lay ill of a Quinſey at the Houſe of *Ariſtion*, 3 *Epid. Sect.* 1. *Ægr.* 7. the Daughter of *Euryanactes*, *ibid. Ægr.* 6. *Eraſinus*, and the young Man who lay ill in the *Forum Mendacium*, in all whom this Symptom was obſerved as they lay dying.

A great *Coldneſs*, or Chilneſs, of the extreme Parts, attendant on an intenſe Thirſt, with a vehement Heat in the Thorax or Belly, is eſteemed very pernicious, becauſe it indicates a violent Inflammation of the Viſcera, and is, as *Galen* ſays, *Com. in 7 Aph.* 1. an uſual Symptom of the ſame. This is aſſerted, alſo, by *Hippocrates*, *Prognoſt.* where he ſays, that "For the "Head, Feet, and Hands, to be cold, whilſt the Belly and "Sides are in an Heat, is bad;" and *Galen*, in his Comment, ſays, "it is not only bad, but mortal." The Senſe of this Paſſage is very well and fully expreſſed by *Cornelius Celſus*, in the following Words: *Cui Febre æque non quieſcente exterior Pars friget, interior ſic calet, ut etiam ſitim faciat, lethale:*" "A Coldneſs of the exterior Parts, where the Fever ceaſes "not in Proportion, and an Heat in the interior Parts ſo great "as to cauſe a Thirſt, is mortal."

A *Coldneſs* of the Extremities is accompanied with other pernicious Signs, beſides thoſe mentioned; ſuch as a violent and continual Pain of the Head or Viſcera, Want of Sleep, a Coma, a furious or gentle Delirium, Dotage, Loſs of Memory, Deafneſs, Blindneſs, Convulſions, Tremor, Loſs of Voice, Hiccup, Reſtleſsneſs, Anxiety, difficult Reſpiration, and cold Expiration from the Mouth and Noſtrils, turbid Urine, which will not become clear, black Urine, with a black ENÆOREMA, [ſee that Word] white, aqueous, lucid Urine, and Suppreſſion of Urine, Drops of Blood from the Noſe, virulent Vomitings, bad and copious Stools, which give no Relief, and other Symptoms of the like Kind. Any of thoſe, appearing with a *Coldneſs* of the extreme Parts, portends Death; and the more there are of them, the more certain and ſpeedy is the fatal Event. This is illuſtrated by *Hippocrates* in the Caſe of *Silenus*, ſo often quoted, of whom he obſerves, that "On "the ſixth Day he had a thin ſmall Sweat about his Head, "his extreme Parts were cold and livid, he was very reſtleſs, "voided nothing by Stool nor Urine, and had an high Fever." And of *Pythion*, 3 *Epid. Sect.* 3. *Ægr.* 3. who died in *Thaſos* in ten Days, it is obſerved, that "On the ſecond Day about "Noon, his extreme Parts, and eſpecially his Head and Hands, "were affected with a *Coldneſs*; he was Speechleſs, and loſt "his Voice, fetched his Breath ſhort, and at long Intervals, "[βραχύπνοος ἐπὶ χρόνου πουλύ. We have here, with *Galen*, "and ſome few Copies, joined the three laſt Words with the "firſt, and not with ἀνεθερμάνθη which follows them. See "BRACHYPNOEA]; his Heat returned with a Thirſt, he had "a quiet Night, and ſweated a little about the Head." From theſe Inſtances, with what has been ſaid, it appears, that a *Coldneſs* which is perpetual, or in a very high Degree, or attended with an Hardneſs, or Lividneſs, is a very pernicious Symptom, as indicating an Extinction of the natural Heat.

We may form Prognoſtics of a bad Event, alſo, from a *Coldneſs*, with reſpect to the preceding Symptoms, as, for Inſtance, when it ſucceeds a Rigor, and is not removed, according to 1 *Prorrhet.* 65. where we read, that "Refrigerations "ſucceeding a Rigor, and not followed by a Return of the "Heat, are bad."

For the extreme Parts to be much chilled after bad Evacuations, is pernicious, and eſpecially if theſe Evacuations themſelves are of the Number of mortal Signs; ſuch as Blood falling by Drops from the Noſe, cold Sweats, Deſudations in the Head, Urine aqueous, livid, icteric, turbid, depoſiting no Sediment, black, with a black Enæorema, a Suppreſſion of Urine, Stools fat, liquid, very fetid, too frequent, or immoderate in Quantity, Spit black, livid, viſcid, expectorated with much Difficulty, or quite intercepted. A *Coldneſs*, or Refrigeration of the extreme Parts, ſucceeding any of theſe bad Symptoms juſt enumerated, is pernicious.

A *Coldneſs* of the Extremities is known to be deſtructive, not only by preceding, but by concomitant and ſubſequent bad Signs. A Refrigeration, or Coldneſs, of the extreme Parts is uſually followed by many other Symptoms of mortal Signification. And here, with reſpect to the *Coldneſs* itſelf, if this be firſt moderate, but increaſes afterwards to a violent and intenſe Degree, it is pernicious, becauſe, as we have ſaid out of *Galen*, it indicates an extreme Languor of the Faculty. It is no leſs fatal, in the ſecond place, if this *Coldneſs* of the Extremities be ſucceeded by little or no Degree of Relaxation; as we find it confirmed in the Caſe of dying *Philiſcus*, 1 *Epid. Sect.* 3. *Ægr.* 1. of whom *Hippocrates* obſerves, "That his ex-"treme Parts were cold on every Side, and never afterwards "recovered their Heat;" and of *Silenus*, "who, it is ſaid, "on the ſeventh Day was ſpeechleſs, and could never from that "time have the Heat recalled into his extreme Parts."

A Part, after extreme Refrigeration, becomes livid, and ſometimes hardens, in which Circumſtance, if it long continues, Death, as was ſaid, is at the Door. The ſame Event may be predicted from a ſubſequent Coma, Dotage, Forgetfulneſs, Deafneſs, Blindneſs, Loſs of Voice, Convulſions, Tremor, cold Sweats, eſpecially in the refrigerated Parts themſelves, (which kind of Sweats ſeems indeed proper only to a Syncope and Death) Evacuations not good, no way relieving the Patient, or ſuppreſſed, Difficulty of Reſpiration, and the like Symptoms, many of which were obſerved by *Hippocrates* in dying *Silenus*, after a Refrigeration of the extreme Parts, and deſcribed by him as follows: "On the ſixth Day he ſweat-"ed a little about the Head, his extreme Parts were very cold, "and grew livid, he was very reſtleſs, had no Excretion by "Stool nor Urine, and was in an high Fever. On the ſeventh "Day he was ſpeechleſs, his extreme Parts recovered no more "Heat, and he made no Water. On the eighth he had a "cold Sweat over all his Body, and, with the Sweat, an Erup-"tion of ſmall, round, red Exanthemata, reſembling *Vari*, "which ſettled without forming an Abſceſs; he voided, with "little Provocation, much thin, and, as it were, indigeſted "Matter by Stool, and with ſome Difficulty; his Urine was "ſharp, and excreted with Pain; his extreme Parts recovered "ſome little Heat; his Sleep was but ſlight and comatous; "and his Urine was thin and pellucid. On the ninth Day "the Symptoms were much the ſame. The tenth he re-"fuſed Drink, was affected with a Coma, and ſlept in a "ſlight manner, his Stools were the ſame, but he diſcharged "Plenty of thickiſh Urine, which depoſited a white and branny "kind of Sediment; his extreme Parts were again refrigerated. "On the eleventh Day he died." We conclude, then, upon the Whole, that a Coldneſs of the extreme Parts, preceded, attended, or ſucceeded, by any of theſe before-mentioned, or the like pernicious Symptoms, gives juſt Reaſon for predicting a fatal Event in acute Diſeaſes.

Of Prognostics from a Change of Heat to Cold, and of Cold to Heat, in acute Diseases.

It often happens in acute Diſorders, that the whole Body changes from hot to cold, and from cold to hot, ſometimes ſlowly, ſometimes ſuddenly. A ſudden Change to Cold, unleſs occaſioned by a Paroxyſm, is always bad; ſince, as it has been obſerved, it indicates the natural Heat to be either reſolved, or by the Multitude of crude Humours oppreſſed and ſuffocated to ſuch a Degree, as to be incapacitated, the Veſſels being obſtructed, for expanding itſelf externally; or that it is entirely collected in the inward Parts, on account of ſome malignant Humour, or violent Inflammation, infeſting ſome of the principal Viſcera.

We conjecture the natural Heat to be reſolved, if there has appeared ſome preceding Cauſe of a Reſolution; ſuch as a violent and continual Fever, continual Watchings, ſevere Pains, and immoderate Evacuations of Blood or Humours.

A Suffocation is indicated by a Plethora, in which the Veins and Arteries are obſtructed by the Multitude of crude Humours.

That the natural Heat is not expanded externally, we know by all thoſe Signs which indicate the Redundance of the Humours; and that it is retracted inwardly by ſome acrid or malignant Humour infeſting the Mouth of the Stomach, the Heart, or ſome other noble Part, we conclude from Pains about the Region of the Part affected, Loathing, ANGOR, [ſee that Word] Nauſea, virulent or bilious Vomitings, Deſpondency of Mind, Anxiety, Watching, the Pulſe highly irregular, weak, and low, and the like, as may be obſerved in thoſe who have the Mouth of their Stomach vellicated by Worms, or ſome acrid Juice.

When

When ſome internal Inflammation is the Cauſe that the Heat retires inwards, it is known by the Heat of the inward Parts; and, by proper Signs, which *Celſus*, as above-quoted, has expreſſed from *Hippocrates*, where he ſays, "That a Refrigeration "of the extreme Parts, where the internal Parts are parched "with Heat in ſuch a manner as to excite a Thirſt, is mortal;" for ſuch a Refrigeration has for its Cauſe an internal Inflammation, and that in a very violent Degree.

In whatever manner, as we ſaid, the Body is refrigerated, it is never good; but it is often highly pernicious, and moſt of all, if the *Coldneſs*, or Refrigeration, be long and intenſe, or, if an Hardneſs, or Lividneſs, accede thereto; for then Death, as was obſerved, is very near. A ſudden and immediate Refrigeration of the actually warm Parts is, alſo, conſtantly bad, except that Refrigeration of the extreme Parts, which is occaſioned by Nature in her Attempts towards a critical Excretion of the Humours; for it often happens againſt a Criſis, from the impetuous Courſe and Conflux of the malignant Humour to ſome noble Part, that the exrreme Parts are refrigerated, and never, or but very ſeldom, and by ſlow Degrees, recover any moderate Degree of Heat, after a Propulſion of the Humour to ſome more ignoble Part of the Body.

On the contrary, for refrigerated Bodies to recover Heat by equal and ſlow Degrees is a very good Sign; for it ſhews, that no inward, latent, acrid, or malignant Humour infeſts a noble Part, that there is no Inflammation in thoſe internal Regions, nor any thing to prevent or intercept the Heat from diffuſing itſelf over all Parts of the Body.

For the Parts to be unequally heated, is never good, and is ſometimes eſteemed a very bad Sign; but for the outermoſt Parts of the Body to be ſuddenly and frequently changed from hot to cold, and from cold to hot, in malignant Diſeaſes, is pronounced by *Hippocrates* very pernicious, and is indeed eſteemed more dangerous than the like Mutations in other Symptoms. To the ſame Purpoſe we read in 1 *Prorrhet.* 43. "That ſudden Mutation of the remote Parts to either Ex"treme is bad, as is, alſo, a Thirſt of the like Nature;" that is, ſubject to the like Permutations. Here *Galen*, in his Comment on the Place, ſays, that in Diſeaſes highly malignant there is a Mutation of theſe Qualities into their Contraries in the Space of one Hour, in ſuch a manner, that the Patient ſhall at one time feel himſelf as cold as in Winter, and, ſoon after, as hot as in the Summer-ſeaſon; and the Reaſon is, he ſays, becauſe he has no Heat of his own, but is heated by that of the Fever, which, beginning at the Middle of the Body, and like a Flame ſpreading itſelf every-where, kindles an Heat in the extreme Parts, which being ſpent and tranſpired, thoſe Parts grow cold again, becauſe the natural Heat is extinguiſhed.

Such ſwift Mutations of Heat and Cold, and, alſo, of Colour, and every other Symptom, frequently indicate a Complication of Affections in the Body, which requiring a conſiderable Length of Time for Nature to ſubdue, ſhews, that the Diſeaſe will be long and tedious; as is expreſly affirmed by *Hippocrates*, 4 *Aph.* 40. where he ſays, that "Mutations in the "whole Body, as when the ſame is refrigerated, and then again "heated, ſignify the Length of the Diſeaſe."

In very acute and violent Diſorders ſuch ſudden Mutations are a Sign that Nature is ſtinted in its due Time by the Violence of the Diſeaſe, and is in imminent Danger of being extinguiſhed before it can put itſelf in a Poſture of Reſiſtance. Upon this Conſideration it is, that we are told by *Galen* on the *Prorrhetica*, that Mutations of this Kind in highly malignant Diſtempers, are mortal, and that they are occaſioned by an Extinction of the natural Heat.

Mutations of this Kind, or ſudden Changes in other Symptoms, as from a Thirſt to an utter Extinction of the ſame, from a placid Stilneſs to Reſtleſsneſs, from Watching to profound Sleep, from the perfect Uſe of Reaſon to Deliriouſneſs, or the Reverſe of all theſe, are generally, alſo, of fatal Signification.

A Change of Symptoms in ſuch a manner as, for Inſtance, there ſhall be a Pain of the Head, ſoon after of the Belly, then of the Legs, and ſoon after a Ceſſation of Pain, followed in a ſhort time by a Delirium, which quickly gives place to another Symptom, has for its general Cauſe a *Metaptoſis*, that is, a Tranſflux of the Humours; for Migrations of the Humour from one Part of the Body to another, or Turgeſcencies of the Humour appearing ſucceſſively in different Parts, have the Name of *Metaptoſis*, which of itſelf bears no other Prognoſtic than does the turgeſcent Humour. Every Turgeſcence or Orgaſm of the Humours is, however, to be dreaded, ſince it threatens an Injury to ſome principal Part; for which Reaſon *Hippocrates*, 1 *Aph.* 22. *Galen*, and indeed all other Phyſicians, in Turgeſcencies, or Orgaſms of the Humours, have immediately preſcribed Purging even in the Beginning, when all things are in a crude State.

Permutations of Heat, Cold, Colour, and other Symptoms and Qualities, appearing with Signs of Concoction, indicate a critical Perturbation of the Humours. And in this Senſe, perhaps, we are to underſtand, *Coac.* 125. where it is ſaid, that "Frequent Changes of the Colour with the Heat are of Ser"vice."

In malignant Diſeaſes theſe Mutations are of Uſe, if made for the better, according to that of *Hippocrates*, 6 *Epid. Sect.* 6 *Aph.* 16. ἐν τοῖσι παλιμβόλοισι δὲ μεταβολαὶ ὠφελέουσι, τούτοισι μεταβάλλειν πρὶν κακοῦσθαι ἐς τὰ πρέποντα, "In deceitful (ma"lignant) Diſeaſes, Mutations are ſerviceable, if directed to "proper Places, before they have received ſome Injury." [*Foeſius* for παλιμβόλοισι reads παλιμβόλοισι, which he owns to be an obſcure Word, and renders it in his Notes by *inconſtantibus*, inconſtant; and in this Senſe, which ſeems moſt probable, the Sentence may be otherwiſe tranſlated, thus, "In mutable, and "inconſtant Diſeaſes, Changes are beneficial, if made in proper "Places, and before any Malignity is contracted."] *Proſper Alpinus de Præſag. Vit. & Mort.*

Febrile Tremor.

A Tremor is a Vacillation of the Muſcles betwixt the State of Tenſion, and that of Relaxation, the diſtending and relaxing Cauſes ſuddenly, and involuntarily, ſucceeding each other; which ſuppoſes an alternate Ceſſation, and Repetition of the Influx of the arterial, and nervous Fluid into the Muſcles: In the Beginning of a Fever, therefore, it ariſes from a partial Stagnation of both the above-mentioned Fluids; but, in the latter End of a Fever, a Deficience of them, after they have been too much diſſipated.

A Tremor, if of long Duration, cauſes Impediments to the Circulation of the vital Humours, and all their fatal Conſequences.

Hence the Diagnoſtic and Prognoſtic of a febrile Tremor may be underſtood; and hence 'tis evident, why a Tremor joined with Coldneſs, and why a very great Tremor, are of extremely bad Preſage: Why a Tremor accompanies very great Affections of the Mind: Why a Tremor happens about the time of Death: Why it is excited by exorbitant Evacuations of any kind: And why, when the Body has been habituated to a too copious Uſe of Liquors of any Sort whatever, a Depletion of the Veſſels, by Abſtinence from theſe Liquors, is accompanied with a Tremor.

A febrile Tremor is cured by reſtoring an equable Influx of the arterial Fluid into the Arteries, and its due Preſſure upon them, and of the Spirits of the *Cerebellum* into the moving Fibres. This is done in the Beginning of the Fever, by ſuch Remedies as diſſolve Viſcidities, and reſtore the Strength, which are ſpecify'd above: But at the latter End of a Fever, by whatever expeditiouſly recruits the diſſipated Liquids, and corroborates the Fibres and Viſcera. See Fibra. *Boerhaave.*

Prognostics from a Tremor.

In treating of this Subject, we are firſt to ſhew what a *Tremor* is; and, next, from what Cauſes it proceeds. *Galen*, *Com.* 1. *in* 3 *Epid.* makes a *Tremor* a Diminution not of natural, but voluntary Motion; in which the Will or Faculty endeavours to move the affected Part, but fails of its Purpoſe, through the Imbecillity or Oppreſſion of the ſame Part, which makes a Motion contrary, at leaſt in ſome reſpect, to what was intended.

This kind of Affection differs from a convulſive Motion, which ſeveral have miſtaken for a *Tremor* in Acute Fevers, under a Perſuaſion that *Hippocrates* makes a *Tremor* to be a convulſive Motion in many of his Patients, particularly in the fair Daughter of *Nerius*, 5 *Epid. T.* 50. of whom it is ſaid, καὶ σπασμοὶ, καὶ τρομώδης ἦν· *There were Convulſions, alſo, and ſhe was affected with a* Tremor. On ſome ſuch Conſideration, perhaps, it was, that *Sabinus* and *Metrodorus*, two antient Phyſicians, ſaid, that a *Tremor* was a ſmall Convulſion; intending, by this Expreſſion, it is ſuppoſed, an Affection complicated of a *Tremor* and Convulſion; which kind of *Tremor* is, alſo, among Phyſicians, uſually called a convulſive Motion, and *Convulſio ex Materia non proportionata.*

Others think that *Hippocrates* ſometimes by *Tremor* means a *Rigor*; particularly 4 *Epid. T.* 13. where he relates of the young Stranger Patient, that *on the ſixth Day he had a Criſis; on the ſeventh the feveriſh Fit returned, and went off with a* Tremor; that is, as they would have it, with a *Rigor*. In this Matter, however, they ſeem to be miſtaken, ſince we perſuade ourſelves that *Hippocrates* means a real *Tremor*, and not a *Rigor*; if for no other Reaſon but that the Criſis, on the ſixth Day, was not a perfect one, but effected partly by an Excretion, partly by a Tranſlation of the morbific pituitous Matter upon the Nerves and Muſcles, which was the Occaſion of the *Tremor*.

But we have ſaid enough on this Point, and proceed to ſhew the Generation of a *Tremor*. And here we are told by *Galen*, *Lib. de Trem. Rig. Palp. & Convulſ.* that a *Tremor* is occa-

ſioned

ſioned by Weakneſs, or an Imbecillity of the motive Faculty, which is ſometimes infirm of itſelf, as in old Perſons; and ſometimes accidentally from other Cauſes; particularly, as the ſame Author proceeds, from want of Aliment, from a violent Flux of the Belly, or a profuſe Hæmorrhage; alſo, from long Faſting; by which the Aliment is conſumed, and, conſequently, the Faculty weaken'd; or from a Reſolution of the vital Force, as the Caſe is in Stomachics, Cardiacs, in Faintings, violent Colds, and a Plethora oppreſſing the Muſcles and Nerves. And he ſeems to ſpeak much to the ſame Purpoſe, *Com.* 1. *in* 3 *Epid.* when he makes the Cauſe of a *Tremor* to be the Imbecillity of the muſcular Force, which is occaſioned either on its own Account, or from an oppreſſive Redundance of Humours, or by Hunger, Laſſitude, Watching, Cares, or immoderate Venery; all which reſolve the natural Heat, or Strength. But let us hear the ſame Author more explicitly declaring the Cauſe and Generation of a *Tremor*, as follows, in the Place juſt before quoted. *A* Tremor, he ſays, *is occaſioned not only when the Muſcles and Nerves are diſorder'd, but when they are in a ſound State; when any Perſon undertakes to heave, or carry in his Hands, ſomething above his Strength. Thus ſome very ſtrong young Men, in carrying ſome very heavy Burden, and eſpecially when they have tried to aſcend with it by Steps, have been obſerv'd to tremble in their Legs; and what happens to them from an extraordinary Weight, the ſame is occaſion'd in old and weak Perſons by a Weight which is lighter; for that is heavy to them.* And a little after, comprehending under one all the Cauſes of a *Tremor*, he ſays, *We had the greateſt Reaſon, therefore, in our Treatiſe* de Tremor. Convulſ. & Rig. *for aſcribing always a* Tremor *to* Imbecillity.

But ſince the Virtue, or Faculty, is ſometimes weak of itſelf, ſometimes from ſome Paſſion of the Mind, and ſometimes not at all from itſelf, but from a Load which oppreſſes it; hence there are three different Cauſes of a *Tremor*; which are, a Diſorder in the Organs under the Command of the Faculty, the Paſſions of the Mind, and an heavy Load.

Firſt, then, a want of due Temperament, or a Diſtemperature, whether hot, cold, dry, or moiſt, may render the Muſcles ſo weak, as to occaſion a *Tremor* in their Parts: For Heat, if exceſſive, reſolves or diſſipates the natural Strength; violent Cold, on the other hand, extinguiſhes the natural Heat; Humidity, when imbibed in an exceſſive Degree, oppreſſes the Muſcles; and immoderate Dryneſs conſumes the Humid, which preſerves and maintains the natural Heat: Hence ſome mortal Phrenſies are obſerved to end in *Tremors*, from an exceſſive Deſiccation of the Origin of the Nerves, as well as of the Nerves themſelves.

Secondly, The Paſſions of the Mind, as Fear, Sorrow, immoderate Joy, and others, which diſſolve the Strength: Or,

Laſtly, An heavy Burden, by which the Muſcles, being oppreſſed, are diſabled from moving according to the Directions of the Will, may be the Cauſes of a *Tremor*.

Theſe things being premiſed, we proceed to the *Prognoſis*: And here, firſt, we obſerve, that ſome *Tremors* affect the Patient in the Beginning, others in the End of the Diſeaſe. As to the former, we learn from *Galen*, *Com.* 2. in 3 *Epid.* they never appear but in a violent Diſorder: *Tremors*, we have ſaid, are occaſioned either from Hunger, Laſſitude, Watching, immoderate Venery, or an oppreſſive Quantity of Humours; in which laſt Caſe they afford nothing certain alone on which to ground a Prediction in the Beginning, but are only Indications of the Violence of the Diſorder; becauſe all Redundances of Humours render a Diſeaſe dangerous. Of this Nature was the *Tremor* of *Pythion*, 3 *Epid. Ægr.* 1. who was taken the firſt Day with a *Tremor* of the Hands, an high Fever, and Delirium. Such, alſo, was the *Tremor* of *Chærion* obſerved on the third Day, 3 *Epid. Ægr.* 5. But though *Tremors*, in the Beginning of Diſeaſes, indicate only a Redundance of Humours oppreſſing the Nerves and Muſcles, unleſs they proceed from Hunger, Laſſitude, Watching, or immoderate Venery, or are excited by ſome Paſſion of the Mind, the Patient, however, will not be free from Danger, if he be viſited with a ſevere, malignant, or even long Diſtemper, ſince not only ſuch, but every other, Diſorder is to be dreaded in a Patient by any means debilitated. Theſe *Tremors*, as we ſaid, are no ſure Grounds alone for predicting any thing of Certainty concerning the Fate of the Patient; but if they are accompanied with other ſevere Symptoms, the Caſe will be dubious, as it was, for Inſtance, in the Wife of *Eunyris*, 4 *Epid. Tr.* 40. "who, it is ſaid, "look'd like one free from any Diſtemper, and had no Fever; "but loſt her Wits, and was afterwards ſeized with a *Tremor* "of the whole Body, attended with a Colliquation, Loathing, "Thirſt, and a Coldneſs." The ſame is further illuſtrated in the Caſe of the old Man, 4 *Epid. Tr.* 41. who, after a Relapſe, fell firſt into a *Tremor* of the Lips and Voice, at which time the Skin of his Body was obſerved to be more tenſe, and his extreme Parts were cold; he dy'd, as no leſs could be expected, tho', perhaps, his *Tremor* might proceed from Worms, as it was thought to do in ſome other Inſtances.

And thus much may be preſaged from Tremors in the Beginning of Diſeaſes; but when they appear without any other Diſorder accompanying or immediately ſucceeding them, they are uſually Signs of an Apoplexy: This Preſage is hinted to us by *Hippocrates*, 4 *Epid. T.* 36. where it is ſaid, "That ſome "were ſeized at the Beginning with a Tremor of the Fingers, "and of the Lips in ſpeaking, and, alſo, of other Parts; but "had their Tongue more ready, and Speech more fluent, than "uſual: They were more remarkable, alſo, for a Redneſs of "the Face. Theſe, alſo, drank Wine to a Degree of Inebriation, or were ſwelled by Vomiting."

Having thus ſhewn what may reaſonably be predicted from Tremors, in the Beginning of Diſeaſes, what we have to ſay of thoſe which are obſerved afterwards is, that ſome of them indicate a critical Tranſlation of the Humours, when Nature propels Part of the noxious Humours from the Viſcera to the Muſcles: And ſuch Tremors are very good, provided they are attended with Signs of Concoction. Such was the Tremor of the young Stranger, 4 *Epid.* before-mentioned, whoſe Fever went off on the ſeventh Day with a Tremor, the noxious Humours being critically tranſlated from the principal Parts to the Muſcles: It often happens, alſo, that at the Approach of a Criſis, by Vomiting, there is a Tremor of the lower Lip, which *Galen*, *Lib.* 3. *de Criſ. Cap. ult.* reckons among the Signs of a critical Evacuation by Vomit.

Theſe, then, are the Tremors obſerved in Diſeaſes after their Beginning, which we have not the leaſt Reaſon to dread; but, on the contrary, thoſe which attend burning Fevers, and Inflammations of the Brain, when the Nerves are dried, or when the Origin of the Nerves, that is to ſay, the Brain, are all mortal. Tremors, from a Dryneſs of the Nerves in Phrenſies, are mortal, and ſeem to be proper to deadly Phrenſies. Juſtly, therefore, was it ſaid by the Author of the 1 *Prorrhet. T.* 9. "That phrenetic Affections end in Tremors," or Tremors follow mortal Phrenſies. *Galen*, alſo, in his Comment on the Place, ſays, "That a Tremor ſucceeds mortal Phrenſies; for "Infirmities of the Nerves are of very long Continuance in "Phrenſies, on account of the Dryneſs of the Affection, the "Faculty being worn out with Watching, and much Motion, "and the Nerves immoderately dried, which are the Cauſes of "Tremors." In a Phrenſy, therefore, you ſee, all Tremors are mortal; and much more, if they appear attended with Convulſions, which are, alſo, the uſual Attendants of vehement Phrenſies. But, in the Beginning of a Phrenſy, a Tremor is not mortal; for a Trembling of the Tongue and Speech are then only Prognoſtics of a Delirium, as we are taught by the Author of 1 *Prorrhet.* 19. In obſcure and mild Phrenſies Tremors are, alſo, uſually obſerved, from a Reſolution of the animal Faculty, and are all pernicious: Of theſe Kinds of Phrenſies we have the Author of 1 *Prorrhet.* pronouncing, *T.* 34. where he tells us, that "Tremulous, obſcure, mild, "and tractable Deliriums, are very phrenetic; as was the "Caſe of *Didymarchus*, in *Coos*." For theſe are occaſioned by a Reſolution of the Faculty. In the laſt Place, a Tremor, from a conſiderable Injury of the Brain, by which the motive Faculty, for the Reaſon given before, is debilitated, is mortal in the higheſt Degree; of which we have an Inſtance in the fair Daughter of *Nerius*, 1 *Epid. T.* 50. *Proſper Alpinus de Præſag. Vit. & Mort. Ægrot.*

Febrile Anxiety.

Anxiety is cauſed by ſome Impediment to the Egreſs of the Blood from the Heart; and, in conſequence of this, from an Impoſſibility of its due Circulation through the Ramifications of the Pulmonary Veſſels, and thoſe of the Aorta: And theſe ariſe either from a ſpaſmodic Contraction of the ſmall Veſſels, or an inflammatory Spiſſitude of the Blood, which renders it incapable of circulating through the proper Canals. Or the ſame Symptom is produced by an Impediment to the Paſſage of the Blood through the Vena Portæ, from the ſame Cauſes: Since, therefore, all the Blood conveyed to the Abdominal Viſcera by the Cœliac and Meſenteric Arteries, and thence to the Vena Portæ by the Veins, cannot paſs farther, it muſt there ſtagnate, diſtend the Veſſels, and reſiſt the freſh Influx of Blood into the Arteries laſt-mentioned, thereby producing the moſt fatal Conſequences. On this account it is abſolutely neceſſary, in all acute Diſtempers, to obſerve, with the utmoſt Diligence, the Cauſes of both theſe Species of Anxiety; and, by all poſſible means, to remove them.

If ſuch an Anxiety continues long about the Heart, and vital Parts, it will produce polypoſe Concretions, Inflammations, and ſudden Gangrenes, accompanied with intolerable Uneaſineſs, and ſoon ſucceeded by Death: But that, whoſe Cauſe is ſituated in the Hypochondria, will produce an exceſſive Sickneſs

neſs at the Stomach, the other Viſcera, mean time, having not ſo acute a Senſation: This is ſucceeded by ſudden Putrefactions of the Blood, contained in the large and weak Veſſels about the Liver; whence Gangrenes, Putrefaction of the Liver, and a fatal Dyſentery, ariſing from ſuch a Putrefaction.

From what has been ſaid, the Phyſician may underſtand the Cauſe and Nature of ſuch an Anxiety, and what Preſages may hence be drawn; and, at the ſame time, he will diſtinguiſh betwixt that Species of Anxiety, excited by ſome nervous Diſorder only, without a Fever, and that which is cauſed by an acute Inflammation, previouſly diſcovered by its proper Signs. And by comparing this with the Violence and Duration of the Symptom, and the Part where the Diſorder reſides, he will be enabled to diſcover its Nature; and to learn why, in all Diſeaſes, at the Approach of Death, the laſt Scene is cloſed with extreme Anxiety; why a convulſive Anxiety is not attended with much Danger, but an inflammatory Anxiety with a great deal; and why Uneaſineſs, Reſtleſneſs, Sighing, Anhelation, and obſtinate Want of Sleep, in ſuppuratory or inflammatory Diſtempers, are the Forerunners of Death.

Hence, likewiſe, it is evident, that various Methods of Cure are required, in order to mitigate the Severity of this Diſorder; in the Diſcovery and Application of which the Phyſician will be duly inſtructed by a previous Knowledge of the particular Nature of the Symptom.

When, therefore, it is diſcover'd, that the Affection is excited by Spaſms, it is to be removed by rendering the acrid, irritating Matter, of whatever Nature, mild; by expelling it, by means of Vomits, Cathartics, Sudorifics, Diuretics, and Abſterſives; by diluting with warm aqueous Fluids; by calming the Affections of the Mind; by relaxing the Fibres, Veſſels, and Viſcera; and by moderating the Tumult of the nervous Fluid with Anodynes and Narcotics.

Boerhaave recommends the following Medicines, as Vomits, proper in Fevers.

Take of Oxymel of Squills, three Ounces; and of diſtilled Succory-water, five Ounces: Mix for a Draught.

Take eight recent Aſarabacca-leaves; infuſe for four Hours, in the diſtilled Water of Carduus Benedictus; and exhibit five Ounces of the expreſſed Tincture for a Draught.

Take of white Vitriol, twenty-five Grains: Reduce to a Powder, to be exhibited in a ſmall Quantity of Beer.

Purgatives proper in Fevers are theſe following:

Take of the Cryſtals of Tartar, five Drams: Reduce to a Powder, and exhibit in warm Whey.

Take of the Cryſtals of Tartar, two Drams; of Sal Prunellæ, twelve Grains; and of Sal Polychreſtum, ſixteen Grains: Reduce to a Powder, to be taken for a Doſe.

Take of Scammony, ſeven Grains; and of diſtilled Succory-water, half an Ounce: Make an Emulſion; to which add twelve Drams of the ſolutive Syrup of Roſes, with Sena, to be taken for a Draught.

Take of Tamarinds, three Ounces; of the Troches of Agaric, three Drams; of Sena-leaves, one Dram; and of Figwort, half an Ounce: Boil in Water, and to eight Ounces of the expreſſed Liquor, add half a Dram of Sal Prunellæ, and an Ounce and an half of ſolutive Syrup of Roſes, with Sena: Of this let the Patient take two Ounces, every Half-hour, till he begins to be purged.

Take of Prunes, four Ounces; of Tamarinds, one Ounce; of Sena-leaves, two Drams; and of Figwort, ſix Drams: Boil with Water for half an Hour; expreſs through a Cloth, and, with twelve Ounces of the Liquor, mix two Ounces of the Syrup of Succory with Rhubarb: Of this Preparation let the Patient take three Ounces every Half-hour, till he begins to be purged.

Take of the Electuarium Diaprunum of *Sylvius*, one Dram and an half; and of the Powder of Sena-leaves, one Scruple: Make up for a Bolus.

The ſame Intention is, alſo, anſwer'd by the following Medicines, exhibited in the Doſes ſpecified. The Electuarium Diaprunum, or Cholagogum, of *Sylvius*, half an Ounce; the Confectio Hamech, four Drams; the Hiera Picra of *Galen*, one Dram and an half; Lenitive Electuary, one Ounce; and Electuary of the Juice of Roſes, half an Ounce.

Sudorifics proper in Fevers are always of a diluting and aperient Nature, and may be prepared in the following manner:

Take of the Roots of Smallage, half an Ounce; of the Roots of Burdock, and China-root, each one Ounce; of the Roots of Succory, Graſs, Navew, Parſley, Rapes, and Butchers-broom, each half an Ounce; of Sarſaparilla, one Ounce; and of Vipers-graſs, half an Ounce; of the Leaves of Sorrel, Succory, Endive, and Dandelion, each one Handful; of Elder-flowers, two Ounces; and of the bruiſed Seeds of Smallage, and Parſley, each one Ounce: Boil in three Pints of Water, of which the Patient is every Quarter of an Hour to drink three Ounces warm, till a gentle Sweat is excited.

After this Formula a great many more may be prepared.

Diuretic Medicines, proper in Fevers, are theſe following:

One Part of recent Milk, mixed with three Parts of Water. Whey; Buttermilk; the Juice of the Birch-tree; the recent Juices of mature Summer-fruit, diluted in Water; Nitre; antimoniated Nitre; *Sal Polychreſtum*; and the preceding ſudorific Decoctions, uſed with a diuretic Regimen.

Abſterſive Medicines, proper in Fevers, are the ſame with thoſe already mentioned.

If the Anxiety is excited by an inflammatory Viſcidity of the Blood, this Viſcidity muſt be diſſolved and diluted; the Veſſels muſt be relaxed; and the Impetuoſity of the vital Fluid muſt be checked. With theſe Views, let the Patient drink copious Draughts of aqueous Liquors, in which farinaceous Vegetables have been boiled, impregnated with Honey and Nitre, ſomewhat aceſcent, and ſlightly aromatic. Let Fomentations, Cataplaſms, Epithems, and Plaiſters, compoſed of diluting, relaxing, emollient, and anodyne Ingredients, be applied to the Region affected. Let Clyſters, at the ſame time, made of the like Ingredients, and ſmall in Quantity, be frequently injected, and, if poſſible, be retained a long time. And let the Vapour of warm Water, mixed with Emollients, be perpetually drawn into the Lungs, through the Mouth and Noſtrils.

And let it be remarked, that this Symptom, above all others, requires a ſafe and immediate Cure, on account of the Severity thereof, and its Conſequences. *Boerhaave.*

Prognostics, or Presages, from an Anxiety.

There occur in the *Prognoſtics*, *Prorrhetica*, and all the Books of *Hippocrates*, relating to Prediction, four ſynonymous Words, ἀλύκη (*Alyce*), ἀλυσμὸς (*Alyſmus*), ἀπορίη (*Aporie*), and ἄση (*Aſe*), or ἄασις (*Aſſe*): Theſe all ſignify the ſame thing which we expreſs by *Anxietas* (Anxiety), *Inquietatio* (Reſtleſneſs), *Implaciditas* (Uneaſineſs), and *Jactatio* (Jactation, or Toſſing). [To theſe may be added δυσφορία]. Some indeed would have *Alyce* to have reſpect to an injured Reſpiration, when it is too frequent and irregular; but it appears from *Galen*, to have relation to a vitiated Decubiture, for, *Lib. de Humoribus*, he ſays, "He (*Hippocrates*) called it *Alyce* (an "Anxiety) though many call it *Dyſareſtia* (a Self-diſpliciency), "for they ſay, thoſe Patients are under an Anxiety (ἄλυκοι), "who cannot continue in one Poſture of Decubiture, but are "continually changing their Poſition, becauſe the preſent is "always uneaſy to them." And he repeats the ſame in his Comment on 7 *Aph.* 56. By theſe Terms, then, we underſtand no more than a vitiated Decubiture, when, through the Violence or Malignity of the Diſeaſe, the Sick is perpetually ſhifting his Poſition, and cannot in the leaſt reſt in one Place, but moves, toſſes, and throws himſelf about, in various manners; ſometimes raiſing himſelf up, then ſinking down, ſometimes on one Side, ſometimes caſting himſelf on his Belly, and ſometimes on his Back, but never reſting in one Place or Figure of Decubiture.

An Anxiety proceeds either from the Stomach, labouring under ſome Diſorder, or oppreſſed with Food, and under a Nauſea; or from a great Inflammation of one of the internal Viſcera; or an Imbecillity, incapable of ſuſtaining the Diſeaſe; or from an occult Malignity infeſting the Heart, as in a peſtilential Fever; or from an Agitation of the Matter in the turgent Veins about the Præcordia; or, laſtly, from a critical and violent Perturbation, occaſioned by an Intumeſcence of the Humours, tending to an Excretion.

Firſt, then, an Anxiety may be owing to ſome Indiſpoſition of the Stomach, or an Oppreſſion of that Part by an immoderate Quantity of Food, as appears from *Hippocrates*, *de R. V. I. A.* and *Galen*'s Comment on that Book. Thus, when the Patient, after long Abſtinence, the Diſeaſe not being paſt its Height, feeds too freely; or when the Mouth of the Stomach,

as *Galen* ſays, *Com. in Aph. & in Lib. de Humor.* contains ſome Humour particularly offenſive, which Humour is not much in Quantity, nor diffuſed in the open Cavity of the Stomach, but immerſed in its Coats; or, laſtly, which is perhaps the ſame, when, as that Author ſays, *Com. in Prorrhet.* the Mouth of the Stomach is vellicated by depraved Juices: An Anxiety, he there tells us, is known to proceed from the Stomach by the Attendance of a Nauſea.

In the next Place, as Anxiety is produced by the Violence of the Diſeaſe, in hot and burning Fevers, eſpecially at their Height, when the Sick becomes reſtleſs and impatient, through the Vehemence of the febrile Heat, and, what is no ſmall Sign of Malignity, has his Anxiety occaſioned by a Corruption of the bilious Humours ſwelling and eſtuating in the larger Veins. This Anxiety is moſt apparent, when one of the Viſcera is affected with a great Phlegmon, or Eryſipelas; in which Circumſtance the Patient is not very hot in his outward and extreme Parts, but burns inwardly.

An Anxiety may, alſo, be owing to Weakneſs, as we are told by *Galen*, *Com. in* 1 *Prorrhet.* when the Faculty is oppreſſed by the Body; as when immoderate Evacuations have preceded, or the Faculty is extinguiſhed by the Malignity of the Diſtemper.

Laſtly, The Patient becomes ſeized with an Anxiety, from a Commotion of the Humours vellicating the Parts, in order to a critical Excretion: Hence we are told by *Hippocrates*, 2 *Aph.* 13. "That they who undergo a Criſis, have a ſevere "Night before the Fit." For when Nature intends an Excretion of the Humours, ſhe raiſes a Commotion and Perturbation in the whole Body, which muſt, of Neceſſity, create a Reſtleſneſs and Anxiety in the Patient. To this we may add, that thoſe who labour under a Suppuration, are often moleſted with this Symptom, either from a Decay of Strength, and Depreſſion of Nature, or from the Uſe of Reſpiration much injured; or an Eſtuation in the Thorax; or from the Acrimony of the Pus corroding and vellicating the ſenſible Parts; or from an acrid Diſtillation from the Head upon the Mouth of the Stomach.

We have given you the Cauſes of an Anxiety, and proceed to ſpeak of the Prognoſtics, which may be formed from this Symptom: And, in general, we ſay, with the Author of 1 *Prorrhet.* 39. 76. and in other Places, that an Anxiety is always bad, except when it is critical, or precedes an happy Criſis: There are, however, ſome Anxieties from which nothing certain can be prognoſticated; ſuch are thoſe occaſioned by ſome Diſorder of the Stomach, which, though bad, never afford, by themſelves, any ſure Prognoſtic of the Death or Recovery of the Patient. And indeed ſuch an Anxiety as is excited by ſome Affection of the Stomach, is diſtinguiſhed, according to *Galen*, *Com. in* 1 *Prorrhet.* from other Anxieties by ναῦσία, a *Nauſea*, and ἔμετος, *Vomiting*; becauſe they who are moleſted with this Sort of Anxiety have a continual Nauſea, and Inclination to vomit; whence it is juſtly ſaid, by the Author of the *Coaca Præſagia*, that an Anxiety, with a Loathing and Nauſea, indicates an Affection of the Stomach. Now in Intermittent Fevers, and in many other Diſeaſes, an Anxiety, or Inquietude, with a Loathing and Nauſea, is far from being malignant, ſince the Anxiety is often removed by Vomiting. Of this we have an Inſtance given us by *Hippocrates*, 7 *Epid. T.* 102. "The Wife of *Theotimus*, he ſays, labouring under "a Semitertian, was ſeized with an Anxiety, Vomiting, and "Horror, all at once; and as the Fit came on with a Thirſt, "in the Progreſs of the Fit, the Heat increaſing with the "Fever to a vehement Degree, ſhe drank Hydromel; and, "after Vomiting, was freed from the Horror and Anxiety together." An Anxiety and Inquietude, therefore, attended with a Loathing and Nauſea, are not much to be dreaded, and leaſt of all, when, by the Benefit of Nature, or the Aſſiſtance of Art, a Vomiting excited, relieves the Patient from them; as, on the other hand, an Anxiety which is increaſed by Vomiting, is not uſually void of Malignity. Thus, alſo, in the Height of burning Fevers, under the greateſt Eſtuation, an Anxiety is not to be feared, becauſe it is a proper Symptom of that kind of Fevers. Anxieties of a good Sort are, alſo, frequently obſerved before an happy Criſis; for, at the Approach of a Criſis, the Patient grows reſtleſs and turbulent, and for very good Reaſons, ſince the whole Body is then thrown into a Commotion and Perturbation, while Nature attempts an Excretion of the morbific Humour: But ſuch critical Anxieties and Inquietudes are diſtinguiſhed from others by critical Signs, and chiefly by a ſupervening Rigor, ſucceeded by a copious Sweat, or by plentiful Vomiting or Purging, or a copious and critical Hæmorrhage. With Reſpect to this Subject, we read, *Coac.* 19. that "Such as labour under an Horror, Anxiety, and "Laſſitude, with a Pain in the Loins, fall into a Flux of the "Belly." And *ibid.* 111. "They, who, after Watchings, "are ſeized with an Anxiety, may expect an Hæmorrhage "from the Noſe." An Anxiety, alſo, often happens, when Nature makes Efforts to propel the putrid and malignant Humours to the Skin, as in an Expulſion of Exanthemata, after whoſe Appearance the Anxiety ceaſes.

Theſe, then, are the Anxieties from which we have no Reaſon to be apprehenſive of any Danger in a Diſeaſe. But, as an Anxiety under a burning Fever, eſpecially at the Height, and utmoſt Intenſeneſs and Eſtuation, at which time it is common to all, merits not our Concern, ſo, on the other hand, a malignant Anxiety obſerved in Fevers, where the outward Parts are in no extraordinary Degree of Heat, whilſt the internal Parts and Viſcera are in a burning State, is juſtly to be dreaded. Such an Anxiety ſeems to be a proper Symptom of malignant Fevers, which are mild and gentle, as to outward Appearance, but full of inward Perturbation and Uneaſineſs, occaſioned, as we ſaid, either by ſome violent Inflammation of one of the Viſcera, or by an Eryſipelas, or by an Eſtuation and Efferveſcence of the highly putrid Humours in the Veins about the Præcordia, or from mere Weakneſs, or from an extraordinary Redundance of crude Humours, with which Nature ſeems to be oppreſſed: In ſuch a Circumſtance the Patient in a Fever labours under a remarkable Anxiety, which we take for no ſlight Indication of Malignity.

But the "worſt of all Anxieties, according to *Coac.* 2. are "thoſe which are attended with Refrigerations," particularly of the extreme Parts, the Feet, Hands, and Ears. To this Purpoſe we find *Hippocrates* thus ſpeaking, in his Book of *Prognoſtics*: "If the Patient, he ſays, lies with his Feet bare, "and not very hot, and throws about his Hands, Neck, and "Legs, in an unequal and diſorderly manner, it is a bad Sign; "for it indicates an Anxiety."

An Anxiety, under Refrigerations of the extreme Parts, where Heat is not to be recalled, is mortal in the higheſt Degree, and ſhews Death to be at hand: Thus it proved in the Caſe of *Silenus*, 1 *Epid. Sect.* 3. *Ægr.* 2. and of the Woman who lay ill *in Foro Mendacium*, 3 *Epid. Sect.* 2. *Ægr.* 12.

No leſs pernicious is accounted an Anxiety which appears attended with bad Sweats, on a critical Day. Bad Sweats, according to *Hippocrates*, are all ſuch cold Sweats, as in a continual Fever appear on the upper Part of the Body, as the Head, Neck, and Clavicles. Of ſuch an Anxiety we read, 1 *Prorrhet.* 27. where it is ſaid, "That a Reſtleſneſs and "Uneaſineſs [δυσκρίαι] with Refrigerations, and a Sweating "of the upper Parts, where the Patient is not free from a "Fever, prognoſticate a Phrenſy and Death, as in the Inſtance "of *Ariſtagoras*." And it was obſerved, by *Hippocrates*, of *Silenus* before-mentioned, "That on the ſixth Day he ſweated "a little about the Head, his extreme Parts were cold and "livid, and he was under a great Anxiety." And of the Woman mentioned, alſo, before, he ſays, "On the ſeventh "Day ſhe had a new Fit of a Rigor, ſucceeded by an high "Fever, and an intenſe Thirſt, with an Anxiety: Towards "Evening ſhe had a cold Sweat over all her Body, with a "Coldneſs of the extreme Parts, and no Return of Heat." Anxieties, therefore, under Refrigerations, attended with bad Sweats, are deſtructive; which is the ſame thing as if he had ſaid, that Anxieties, with bad Signs, are bad; and with pernicious Signs, pernicious and deadly. Now, that cold Sweats of the Head, and Refrigerations of the extreme Parts, are pernicious Signs, we are taught by *Hippocrates*, *Coac.* 572. 573. *Prognoſt. & Lib. de Criſibus.*

Anxieties on critical Days afford ſurer Prognoſtics, and are eſteemed very bad, when ſucceeded by no ſalutary Evacuation, as by an Hæmorrhage from the Noſe, or by Stool, Vomit, or Urine, but eſpecially by Sweat. For Confirmation hereof we read, 1 *Prorrhet.* 61. "Refrigerations of the whole Body, "attended with an Anxiety, but no Sweat, are bad Signs." And of Anxieties, attended with bad Evacuations by Stool, we are told by *Hippocrates*, *Lib. de R. V. I. A.* "That ſuch "Stools [ſpumous, and ſaturated with pure Bile] were very "pernicious on many Accounts, as not extinguiſhing, but "increaſing the burning Heat of the Hypochondria, and "exciting a Reſtleſſneſs, Anxiety, and Jactation of the "Members." Which *Galen*, in his Comment, tells us, are Symptoms of an Inflammation, affecting the Hypochondria themſelves. Of the ſame Symptom, in Conjunction with Vomitings, it is ſaid, 1 *Prorrhet.* 62. "Pure and unmixed "Vomitings, attended with Anxieties, are bad."

An Anxiety under an utter Decay of Strength, from immoderate Evacuations, is pernicious in the laſt Degree. Such a Sort of Reſtleſneſs and Uneaſineſs is obſervable in many dying Perſons. We have an Inſtance, 7 *Epid. T.* 12. in the Perſon of *Chartades*, who (after vaſt Hæmorrhages by Stool) "was affected with an Anxiety about the Mouth of the Sto-"mach, [περὶ τὴν καρδίαν] a ſlight Sweating in almoſt every "Part of his Body, and a ſlow Fever. At firſt he ſeemed to "have the free Uſe of his Reaſon; but, as the Day went for-

" ward, the Anxiety and Uneaſineſs increaſed upon him, and " he fetched his Breath ſomewhat ſhorter: He was more " hearty and obliging in his Salutations, and Receptions of " Perſons, than Occaſion required, and ſome Symptoms of a " Lipothymy appeared, which were not at all relieved by " drinking Ptiſan, or Barley-water [τὸ ἀπὸ κρίμνων ὕδωρ]: " Towards Evening he drew his Breath very thick, with much " Agitation and Toſſing, and Turning from Side to Side, " without the leaſt Intermiſſion, or Reſt."

In acute Diſeaſes, if a Pain, affecting ſome ignoble Part, ceaſes, and the Patient is afterwards taken with an Anxiety, it is of bad Prognoſtication. An Inſtance of this we have in the bald Man of *Lariſſa*, 3 *Epid. Sect.* 3. *Ægr.* 5. " Who, " *Hippocrates* ſays, on the third Day, was freed from the Pain " in his Thigh, but was under much Perturbation and Deli- " rioufneſs, with great Jactation and Uneaſineſs; and the fourth " Day about Noon he died."

For a Perſon, after receiving a Wound or Blow, to be under an Anxiety, or very reſtleſs and uneaſy, is, alſo, a bad Sign; as was obſerved by *Hippocrates*, 5 *Epid. T.* 59. in one who received a Stroke on the Head with a Stone; and in another, who had his Liver pierced with a Dart. *Ibid. T.* 61.

Anxieties, alſo, are often obſerved attendant on mortal Phrenſies, as we learn from the Author of 1 *Prorrhet.* 12. where he ſays, " That in the Beginning of a Phrenſy for the " Patient to be mild and gentle, but often ſhifting from Place " to Place, is a bad Sign."

We conclude, therefore, from the Whole, that all Anxieties are bad, except thoſe which precede a ſalutary Criſis, and ſuch as proceed only from an Affection of the Stomach, and are not preceded, accompanied, or ſucceeded by other pernicious Signs; or ſuch as were obſerved in the Caſes of *Silenus*, the Woman in the *Forum Mendacium*, the bald Man of *Lariſſa*, and *Chartades*, before-related. *Proſper Alpinus*, *de Præſag. Vit. & Mort. Ægrot.*

Febrile Thirst.

Thirſt is excited by a Dryneſs of the Solids, an Immeability of the Fluids, and a ſaline, alcaline, or bilious and oleous Acrimony.

Thirſt, therefore, always witneſſes that ſome one of theſe Cauſes is preſent; and, on this Account, it prognoſticates all the Evils which are capable of being produced by ſuch Cauſes.

Care muſt, therefore, be taken, to remove immediately this Symptom of Thirſt, particularly in Acute Diſtempers.

Thirſt is removed, firſt, By drinking frequently, and in ſmall Quantities at a time, aqueous, ſubacid, nitrous, demulcent, warm Liquors; of which kinds are the following.

Take of common ſimple Barley-water, forty Ounces; of the Rob of Currants, four Ounces; as many Drops of the Spirit of Salt, as is ſufficient to procure a grateful Acidity; and of diſtilled Cinnamon-water, one Ounce: Mix, for ordinary Drink.

Four Ounces of the Robs, Jellies, or Syrups, of the following Fruits taken as above, may be uſed: The Robs, Jellies, or Syrups, for Inſtance, of Currants, Quinces, black Cherries, Barberries, Mulberries, Raſpberries, Pomegranates, Lemons, Citrons, common and *China* Oranges. Thus,

Take of the Jelly of Quinces, one Ounce; of the Diamoron of *Nicolaus*, two Ounces; of the Syrup of Citron-juice, one Ounce; of the diſtilled Waters of Borage, and Baum, each four Ounces; of common Water, twenty-four Ounces; and of Rheniſh-wine, three Ounces: Mix all together.

Drinks proper in a febrile Thirſt are, alſo, theſe following: Milk and Water, Whey, Butter-milk, Small Beer, Coffee, and one Part of Wine mixed with twelve Parts of pure Water, and a little Lemon-juice.

Secondly, Thirſt is removed, by waſhing the Noſtrils, and gargarizing the Mouth and Fauces, with the ſame kinds of Fluids as thoſe above recommended.

Thirdly, By applying Fomentations, Epithems, and Cataplaſms, of the ſame Nature, to the Region of the Hypochondria.

Fourthly, By the Uſe of ſimilar Clyſters, retained a conſiderable time.

But if a very great Thirſt is accompanied with extreme Weakneſs, it will be ſafe to exhibit vinous, or more ſpirituous Liquors, mixed with thoſe above recommended. Thus,

Take two of the beſt Citrons, take out the Seeds, pare off the yellow Bark, throw away the whole fungous Subſtance, and, bruiſing the yellow Bark and the Pulp together, put them in thirty-two Ounces of ſimple Barley-water; to which add, of the Syrup of Mulberries, an Ounce and an half; of Rheniſh-wine, eight Ounces; and of toaſted Bread, two Ounces; To be preſerved in a cloſe earthen Veſſel. Or,

Take of the Syrup of Lemons, three Ounces, of the beſt Spirit of Wine, one Ounce and an half; of Rheniſh-wine, four Ounces; and of pure common Water, fourteen Ounces: Mix all together, for ordinary Drink. *Boerhaave.*

Prognostics from Thirst in Acute Diseases.

It is natural for Perſons under acute and burning Fevers to be moleſted with Thirſt, as conflicting with a hot and dry Diſtemper, ſince it is much worſe for the Patients, in ſuch Caſes, not to thirſt at all, as it is, alſo, for them to have their Urine of no Colour, but thin and aqueous. It is beſt, therefore, on all Accounts, ſince the Reaſon of the thing requires it, that Perſons under hot Diſtempers ſhould be affected with Thirſt: But immoderate and intenſe Thirſt in no Caſe is good, as indicating a vehement and burning Heat in the internal Viſcera; but, on the contrary, is, for the moſt part, a bad and dangerous Symptom, and ſignifies that the Diſeaſe is very ſtrong and urgent upon the Patient, and difficult to be ſubdued; and that Nature is in Danger of ſinking under the Weight which oppreſſes it. We may, therefore, ſafely pronounce an immoderate Thirſt, as it is an Indication of the extraordinary Strength of the Diſeaſe, a dangerous and formidable Symptom in acute Diſorders, but moſt pernicious, and fatal, when it precedes, accompanies, or follows other very bad Signs; in which Caſe it is a certain Preſage of Death.

But from a Thirſt alone, as well in acute as other Diſeaſes, we can prognoſticate nothing with Certainty, but regard it only as a Sign of the Strength and Violence of the Diſeaſe. With Reſpect to this Subject may be conſidered, what *Hippocrates* writes, 1 *Epid. Sect.* 2. *Stat.* 3. where he ſays, *That the burning Fevers (of that Conſtitution) afforded Signs in the Beginning in what Subjects they would prove mortal; for the Patients were firſt ſeized on a ſudden with a high Fever, attended with a ſmall Degree of a Rigor, they were incapable of ſleeping, were very reſtleſs, and afflicted with a Thirſt and Nauſea.* Such was the Caſe of *Philiſcus*, 1 *Epid. Sect.* 3. *Ægr.* 1. of whom we read, *That on the third Day in the Morning, and till the Middle of the Day, he ſeemed to be free from a Fever; but towards Evening he was ſeized with a high Fever, attended with Sweat, and a Thirſt, a Dryneſs of the Tongue, and a Blackneſs of the Urine.* In this Caſe, a Thirſt, attended with black Urine, and other bad Symptoms, ſignified that the Diſeaſe would prevail over Nature, and prove mortal. The like Thirſt was obſerv'd by *Hippocrates* in *Pythion*, 3 *Epid. Sect.* 3. *Ægr.* 3. *who*, he ſays, *was ſeized with a vehement Rigor, ſucceeded by a high Fever, a Dryneſs of the Tongue, a Thirſt, Redundance of Bile, black Urine, which had an Enæorema* [ſee the Word], *but no Hypoſtaſis.* This Thirſt continued upon him till the fifth Day, accompanied with other pernicious Signs, particularly a Coldneſs of the extreme Parts, and a Loſs of Voice. We conclude, therefore, that an intenſe Thirſt, accompanied with other bad Signs, is of the moſt fatal Conſequence. Of this Nature, perhaps, was the Thirſt which the Wife of *Hermoptolemus* endured, 7 *Epid. T.* 13. *who*, it is ſaid, *was affected with a Trembling of the Hands, and a Shaking of the Head, a depraved Caſt of the Eye, with a violent Thirſt; and as ſoon as ſhe had drank, ſtill craved for more Drink, and ſnatched the Cup from the Attendant, and took large Draughts, and would not ſuffer the Cup to be pulled from her; her Tongue was dry, and very red; and, when under a Tremor, ſhe would put both Hands to her Mouth, and chew them.* Like to this was the Thirſt of *Ariſtocrates*, who died in four Days of a peſtilential Carbuncle. We conclude, upon the Whole, then, that an immoderate Thirſt in acute Diſeaſes is never good, oftentimes bad, and, when attended with other bad Signs, moſt pernicious and fatal.

What is to be prognosticated from a Removal or Absence of Thirst in Diseases.

A moderate Thirſt in Diſeaſes is always good; and to thirſt more or leſs, as the Reaſon of the thing, and the Nature of the Diſorder, with reſpect to Heat, require, can be no bad Sign: But for the Patient to be moleſted with an intenſe and continual Thirſt, is never a good Prognoſtic; as, on the contrary, not to have the leaſt Deſire of drinking, when labouring under a hot and dry Diſtemper, is highly pernicious, and fatal; and the more, when the Thirſt, with which they were before afflicted, ceaſes, without any Reaſon to be given for it. The Author of 1 *Prorrhet.* 57. tells us, that " a Thirſt in acute Diſeaſes, " which ceaſes for no Reaſon, is bad." And *Galen*, in his Comment on the Place, endeavouring to account for it, has

theſe Words: " When, therefore, it happens, that the Thirſt " cannot be removed, either by Vomiting, Sweating, or Pur- " ging, or by a critical Abſceſs, ſo as that the Diſorder itſelf is " not mitigated, but that the Senſe thereof is blunted or abated, " this is no good-Sign; but if the Thirſt ceaſes whilſt the " Tongue continues dry, and the Urine crude, this is a ſurer " Evidence of the Malignity of the Diſeaſe; and ſtill the more, " if no refrigerating or moiſtening Remedies have been out- " wardly applied; a proper Uſe of which Medicines, in acute " Diſeaſes, is not ſo much to extinguiſh a Thirſt, as to abate it. " But in acute Diſtempers, if the Thirſt be perfectly removed, " it is pernicious in the higheſt Degree." From this Paſſage of *Galen* it is obvious to every one, that it is highly pernicious, in acute Diſorders, for a Thirſt to ceaſe for no manifeſt Cauſe, as, for Inſtance, a beneficial and ſalutary Evacuation or Purgation, but in a crude State of the Diſtemper.

But this want of Thirſt, in ſuch Caſes, is moſt fatal and deadly, when attended with other deſtructive Symptoms. To this Purpoſe we find *Galen* diſcourſing, in his Comment on the firſt of the *Epidemics:* " As an Accumulation to all thoſe " pernicious Symptoms under which the Patients laboured, " muſt be reckoned, that though they were afflicted with a " violent Heat, and Eſtuation, they had no Thirſt; but as " for thoſe who were at firſt moleſted with a violent Thirſt, " and were afterwards freed from it, ſuch an Event muſt be " neceſſarily owing to one of theſe two Cauſes; that is, either " a Solution of the Diſeaſe, or an Extinction of the Faculty, " in ſuch a manner, that the Sick are no longer ſenſible of " the Evils under which they ſuffer: But the firſt was not the " Caſe in thoſe Diſorders, ſince theſe Symptoms prov'd mortal " in the Event."

They who labour under acute Diſeaſes, are not thirſty; firſt, On account of a cold and moiſt Humour diſtilling from the Head upon the Stomach; whence *Hippocrates* juſtly ſays, 4 *Aph.* 5. that they who are moleſted with a Cough, are not very thirſty, becauſe the Phlegm, which diſtils from the Head upon the Stomach, takes off the Thirſt: And this want of Thirſt is obſerved in ſome pleuritic and peripneumonic Patients; from which, however, nothing can be prognoſticated with Certainty, ſince the Sick, in ſuch Caſes, are diſtinguiſhed from others, who are not afflicted with Thirſt by their Tongue, which is not dry and parch'd, but moiſt and ſoft, from the Phlegm which moiſtens it.

Secondly, A want of Thirſt in very hot Diſtempers, where the Patient is in a very high Eſtuation, proceeds either from a Delirium, which renders him inſenſible of what he ſuffers; or an Extinction of the appetitive Faculty of the Stomach, or from both Cauſes. Of Perſons in a Phrenſy, the Author of 1 *Prorrhet.* 16. ſays, *Little Drinkers, who are ſtartled at the leaſt Noiſe, are ſubject to Tremblings.* And *Galen*, in his Comment, tells us, that *Phrenetic Patients are* βραχυπότται, *that is, have little Deſire to drink, though their Diſorder be of a hot and dry Nature, and their Tongue rough with exceſſive Dryneſs.* But we are taught by *Hippocrates*, that ſuch Patients are diſorder'd in their Senſes, 2 *Aph.* 6. where he ſays, *They who are affected with Pain in any Part of the Body, and yet have but little Senſe thereof, have their Reaſon diſturbed.* Hence he ſays of thoſe Perſons who labour'd under a Phrenſy, and whoſe Caſes he deſcribes, 3 *Epid. Sect.* 3. that they were all free from a Thirſt. And he gives a particular Inſtance of this kind in the ſame Book, Caſe the laſt, of the young Man of *Melibœa*, who labour'd under a Phrenſy, unattended with a Thirſt.

In ſuch Caſes as theſe, then, not to thirſt, is a bad Sign; and, if attended with others of the like Nature, mortal; but without theſe nothing certain can be prognoſticated from it: For there are many Perſons in a Delirium who never call for Drink, and yet recover, though, it is true, they are ſuch as have no violent Delirium, nor other concomitant deſtructive Symptoms, particularly, which is much to be regarded, a Dryneſs of the Tongue. But where that Part is not only very dry, but, alſo, black and foul, not to thirſt is mortal in the higheſt Degree, as it ſhews, that the Diſeaſe is very ſtrong and urgent upon the Patient; and that Nature is ready to ſink under its Burden.

In a very hot Diſtemper, not attended with a Delirium, but a great Dryneſs and Aduſtneſs of the Tongue, a want of Thirſt is infallibly mortal, as it demonſtrates the Faculty to be extinguiſhed; and with the more Certainty, if the Thirſt, under which the Patient laboured before, ceaſes unaccountably, and for no Reaſon; for this is a ſure Indication of the Extinction of the Faculty. And we have very good Reaſon to aſſert it fatal, ſince it is impoſſible for Nature to be oppreſſed, and totally ſubdued, by the Diſeaſe, without the Appearance of ſeveral other mortal Signs. Thus it happened in the Caſe of *Eraſinus*, 1 *Epid. Sect.* 3. *Ægr.* 8. " who had a continual Fever, with " Sweating; an Elevation and painful Tenſion of the Hypo- " chondria; black Urine, which had a round Enæorema, but " no Hypoſtaſis, a great Dryneſs of the Tongue, but no extra- " ordinary Thirſt." Another Inſtance is in *Hermocrates*, 3 *Epid. Sect.* 1. *Ægr.* 8. " whoſe Tongue at firſt was parch'd " with Heat, and ſoon after he was ſeized with Deafneſs, and " was incapable of ſleeping, but not very thirſty." And a little after we read, " On the twentieth Day he had an Averſion " to all Food, had the perfect Uſe of his Reaſon, but could " not ſpeak; his Tongue was very dry and parch'd, but he had " no Thirſt; and he ſlept, but labour'd under ſomething of a " Coma." The ſame was obſerv'd in the Virgin Daughter of *Euryanax*, 3 *Epid. Sect.* 2. *Ægr.* 6. who through the whole Courſe of her Fever, of which ſhe died, had no Thirſt, but abhorred Food. From theſe, and the like Inſtances, we conclude, that in acute Diſeaſes it is always a bad Sign for the Patient to be without a Thirſt, when he has been freed from it in an unaccountable manner; but when a Thirſt ceaſes for good Reaſons, which may be given, ſuch a Ceſſation is ſo far from being bad, that, on the contrary, it is a very good Sign; as it proved, for Inſtance, in the Perſon who lay ſick in the Garden of *Dealces*, 3 *Epid. Sect.* 1. *Ægr.* 3. who had ſeveral times, in the Courſe of the Diſeaſe, been thirſty and delirious, but was, at laſt, for a very good Reaſon, which was the Solution of the Diſorder, freed from his Thirſt. *On the twentieth Day*, ſays Hippocrates, *he fell into a Sleep, was reſtor'd to the perfect Uſe of his Reaſon, ſweated, and was freed from his Fever and Thirſt.* This Perſon underwent ſeveral Criſes, which were preceded by a Thirſt, a Dryneſs of the Tongue, and a Delirium; and theſe Symptoms were all alleviated, and the Thirſt, in particular, diminiſhed, after a Criſis, as the Reaſon and Nature of the thing required: But a want of Thirſt, contrary to Reaſon, or juſt Expectation, and attended with other pernicious Signs, is deſtructive and fatal, in the higheſt Degree. *Proſper Alpinus, de Præſag. Vit. & Mort. Ægrot.*

A Febrile Nausea.

A Nauſea is an ineffectual Effort to vomit, accompanied with an Idea of Horror; it is, therefore, excited by ſlight Convulſions of the muſcular Fibres of the Fauces, Oeſophagus, Stomach, Inteſtines, and abdominal Muſcles: Theſe are cauſed, firſt, By an acrid, putrid, and bilious Matter, received into the empty Stomach, thence aſcending into the *Fauces*, which, together with the Stomach, it vellicates, and irritates. Hence the Parts above-mentioned are drawn into Conſent, and excited to ſimilar Motions: And that a Nauſea is thus cauſed, we diſtinguiſh, by previous Faſting, by a putrid Breath, and Sordidneſs of the Mouth, and Fauces. Or, ſecondly, By a tenacious, viſcid, fluctuating Matter, reſiding in, and vellicating the ſame Parts. This Species of Nauſea is diſtinguiſhed by the previous Signs of ſuch a Viſcidity. See Lentor. Or, thirdly, by a ſlight Inflammation of the Stomach, Oeſophagus, Inteſtines, and adjacent Viſcera: This is diſtinguiſhed by the proper Signs of ſuch Inflammations.

Fourthly, By the Remembrance of ſomething, which, formerly taken into the Stomach, excited ſuch a Nauſea.

Fifthly, By an inordinate Motion of the nervous Fluid, excited by any Cauſe whatever: This is diſtinguiſh'd by *Deliria*, Spaſms, a Vertigo, and Tremor.

If a Nauſea perſiſts long, it produces Emptineſs, Abſtinence from proper Drinks and Medicines, Vomiting, and many Misfortunes which may hence be excited; the principal of which are, Weakneſs, an alcaline putrid Acrimony, and univerſal Dryneſs.

A Nauſea, from the firſt Cauſe, is to be cured by the Uſe of acid, nitrous, aqueous Drinks, Aliment, and Medicines, which are the ſame as thoſe recommended againſt febrile Thirſt; by the Exhibition of a lenient Purge of the ſame Kind; by acido-auſtere Medicines, which corroborate the Fibres; or, if theſe do not ſucceed, by a Vomit.

The ſecond Species is to be remov'd by diluting, attenuating, purging, and Emetics. The Medicines here proper are the ſame as thoſe recommended in a febrile Anxiety.

The third Species is only to be removed by curing the Inflammations which excite it.

The fourth Species is cur'd by forgetting and avoiding the Ideas which cauſe it.

The fifth Species is remov'd by auſtere Remedies, Reſt, Narcotics, and cold Water. Thus, for Inſtance,

Take of the Rob of Quinces, four Ounces; of the Syrup of Lemons, two Ounces; of *Matthiolus*'s diſtill'd Aqua Vitæ, one Ounce; of diſtill'd Cinnamon-water, ſix Drams; of the diſtill'd Water of Citron-peels, ſix Ounces; and of the Tincture of Opium, ſixty Drops: Mix all together, and exhibit one Ounce for a Doſe, till the Nauſea is remov'd.

Take of ſtrong diſtill'd Mint-water, a ſufficient Quantity: And let the Patient drink an Ounce of it cold, every Quarter of an Hour.

Take of the Rob of Quinces, a ſufficient Quantity: Of which let the Patient take one Dram every Half-hour.

Take of recent Lemon-juice, half an Ounce; and of Rheniſh-wine, one Ounce: Mix both ſufficiently together; add one Dram of the Salt of Wormwood; and exhibit during the Effervescence.

Take thin Slices of Lemon, ſprinkled with Sugar: To be kept lying on the Tongue.

Moſt Patients receive Relief from Epithems, Fomentations, Cerates, and ſtomachic Applications; eſpecially when there is no Inflammation. Thus,

Take of the aromatic Powder of Roſes, of Diagalanga, and the Diarrhodon Abbatis, each one Ounce: Mix all together, ſew up in a Piece of Muſlin, and apply to the Epigaſtrium.

Take of the ſtomachic Cerate of *Galen*, a ſufficient Quantity for making a ſtomachic Plaiſter, to be ſpread upon Leather. This Plaiſter affords Relief, ſo long as it adheres.

Take of *Matthiolus*'s Aqua Vitæ, one Ounce; of the Spirit of Angelica-roots, of the carminative Spirit of *Sylvius*, and of the Spirit of Mint, each two Ounces: Let a ſmall Slice of toaſted wheaten Bread, well ſoak'd in theſe, be applied warm to the Epigaſtrium, applying over it a Swine's Bladder moiſten'd with Oil, and ſecur'd by a Bandage. This Dreſſing is to be renew'd every twelve Hours.

Hence we learn why, in acute Diſeaſes attended with a *Nauſea*, a Purge, or an Emetic, exhibited in the Beginning, are of ſuch great Service; and in what ſort of acute Diſtempers: Why Patients, under acute Fevers, abhor pinguious Aliments, Fleſh, Eggs, and Fiſh: And why, on the contrary, they covet Water, Acids, ripe Fruits, and cooling Liquors:

Why Medicines can be of no Service, unleſs the Nauſea is firſt cur'd:

Why the Symptom of a *Nauſea* is often incurable:

And why Diſeaſes, attended with a Nauſea, are generally, when they ceaſe, ſucceeded by a ſudden, unuſual, and ſurpriſing Appetite.

Febrile Eructations, and Flatulences.

Eructations are cauſed by an elaſtic Matter, dilatable by Heat, Effervescence, or Fermentation; which one Moment is confin'd, and the next ſet free, by a Relaxation of the Part which confines it, and is forcibly exploded, with a Noiſe.

Thus Air, oppoſite Salts, ripe Fruits, putrefying Humours, and fermenting Vegetables, afford Matter for Eructations and Flatulences; the Force and Fetidneſs of which vary, according to their different Natures.

Theſe, however, if ſuffer'd to paſs off freely, are productive of no forcible Exploſion: It is evident, therefore, that Spaſms of the *Sphincter* of the *Oeſophagus*, of the Oeſophagus itſelf, of the ſuperior and inferior Orifice of the Stomach, and of the Inteſtines, concur, and are alternately relax'd, in order to produce Eructations, Flatulences, Exploſions of Wind from the Anus, and Murmurings of the Inteſtines from Wind confin'd.

If the two Cauſes above-mention'd, that is, a Production of Flatulences, and their Confinement by Spaſms, concur, act ſtrongly, and continue long, then the elaſtic Matter, dilated by Heat, Motion, and its own proper Force, and confin'd in a Cavity, the ſurrounding Fibres of which are ſpaſmodically conſtricted, diſtends, ſtretches, and excites Pain in the Membranes which confine it, and compreſſes the adjacent Parts: Hence Pains, and intolerable Anxieties, are excited, which ceaſe upon the Emiſſion of the Flatulences. To this, if the Force of a Fever is added, it is evident, that inſupportable Torments may be produced.

The Cure of theſe Diſorders conſiſts,

Firſt, In removing the Matter which excites them, by diluting Remedies; by warm, aqueous, and ſomewhat aromatic, diſſipating Drinks; by Remedies which render the effervescing Salts perfectly neutral; ſuch as correct Putrefaction, and put a Stop to Fermentation.

Secondly, In mitigating the Convulſions by proper Remedies; among which are, thoſe which deſtroy Acrimony, and compoſe the Spirits; the principal of which are, Opium, and mild Antihyſterics.

Thirdly, In the Application of warm, relaxing, anodyne, and ſomewhat aromatic Clyſters, Fomentations, and Epithems; and of Cupping-glaſſes without Scarification, to the *Abdomen*.

Hence we underſtand what ſorts of Meats, Drinks, Aliments, and Medicines, are flatulent; why Flatulences happen particularly in the Stomach, and ſuperior Inteſtines, when empty; in the Inteſtines, when wounded; when the Abdomen is, by any means, compreſſed; and why they accompany hypochondriac, hyſteric, convulſive Diſorders, and the Colic.

Febrile Vomiting.

Vomiting is a violent Expulſion, firſt, of the Contents of the Stomach; then of thoſe of the Inteſtines; and, laſtly, of thoſe of the Viſcera, which evacuate themſelves into the Inteſtines. The proximate Cauſe of Vomiting is, a convulſive Motion of the muſcular Fibres of the *Fauces*, *Oeſophagus*, Stomach, Inteſtines, Diaphragm, and abdominal Muſcles; the remote Cauſe, whatever is capable of ſtimulating the Fibres above-mention'd, or the eaſily-irritable Viſcera, to ſpaſmodic Contractions.

Vomiting is ſometimes excited by a primary Diſorder of the Stomach, upon the Acceſs of a Fever; as, if it is affected with Convulſions, *Inflammation*, *Suppuration*, or *Scirrhus*; or if any Part of it is become cartilaginous; in theſe Caſes it is exceſſively obſtinate, and may be diſtinguiſhed by the Signs of the Diſtemper which produces it; and when that is remov'd, it ceaſes ſpontaneouſly.

But, frequently, Vomiting is cauſed by ſimilar Diſorders in the Viſcera, and circumjacent Parts, when they are irritated by the Stomach diſtended with Aliment, eſpecially upon the Acceſs of a Fever. In ſuch Caſes, it is extremely obſtinate, and the Cauſe is ſometimes not eaſily diſcovered.

Or a Vomiting may be excited by every Cauſe of a conſiderable *Nauſea*, mentioned above, from the Doctrine of which this Species of Vomiting may be diſtinguiſh'd; and hence, alſo, we may learn how to treat, and cure it.

If the Symptom of Vomiting continues long, it produces an Atrophy, the Iliac Paſſion, Convulſions, and all the Effects of a great and obſtinate Nauſea, mention'd above.

The Cure of that Species of Vomiting which is excited by primary Diſorders of the Stomach, and thoſe of the adjacent Parts, is to be learnt from the Hiſtory of thoſe particular Diſeaſes.

That Species which is produced by the ſame Cauſes as a *Nauſea*, is to be cur'd by the Remedies recommended for a *Nauſea*, diligently applied; eſpecially Opiates, and corroborating, attracting, and diſſipating Epithems.

Hence the Reaſon is evident, why Vomiting is ſo difficult to be check'd in many acute Diſeaſes; and hence we learn the Falſity and Danger of the Maxim, *that Vomiting is cur'd by Emetics*. This Doctrine of Vomiting farther teaches us, why Sudorifics ſometimes remove Vomiting, as in the Plague; why it often ceaſes, immediately after a Criſis, as in the Small-Pox; why it is frequently cured by Bleeding, as in acute inflammatory Diſtempers; why thoſe who vomit perpetually in the Beginning of acute Diſtempers, without any Inflammation of the Stomach, or adjacent Parts, have a Criſis by way of Diarrhœa, which may be prevented by an Emetic exhibited in the Beginning of the Diſtemper; and why a Diſcharge, by Vomit, of whatever is taken into the Stomach, as ſoon as receiv'd, is one of the worſt Symptoms that can happen in acute Diſtempers.

An Hiccup may be excited by the ſame Cauſes as a Vomiting, and is to be cur'd by the ſame means.

Predictions from Vomitings; *and firſt of thoſe of a ſalutary Kind.*

Since it is certain, that the Humours may ſuffer a good or a bad Expurgation by way of *Vomiting*, the Events of Diſeaſes may, therefore, in a great meaſure, be prognoſticated from ſuch Excretions; from thoſe which are bad, otherwiſe call'd *ſymptomatical*, we may predict either Death or a long Diſeaſe; and from the good we may venture to foretel the Recovery of the Patient.

Vomiting in the Beginning of acute Diſtempers, is excited by an Irritation of the Stomach, through the exceſſive Quantity, or depraved Quality of the Food, or Humour contained in it; or from an Exſudation of a Humour, either from the circumjacent Parts, the Liver, for Inſtance, when under an Inflammation, or from the whole Body, and a Cacochymy of the Blood and Juices; but *Vomitings*, in the Increaſe and Progreſs of the Diſorder, are produced by the Redundance or Malignity of the Humours ſtimulating the Stomach to Excretion. *Vomitings*, thus occaſion'd, are by Phyſicians call'd *ſymptomatical*, and bad; becauſe they are ſeldom or never ſucceeded by a Recovery, or, at leaſt, not till after a long time, much Pains, and frequent Relapſes. It is uſual, alſo, for the Patient, in the Height of the Diſeaſe, or a little before, when Signs of Concoction have preceded,

preceded, to be ſuddenly taken with *Vomiting* in a plentiful manner; and this *Vomition* they call *critical*, becauſe it is the Work of Nature prevailing over the Diſeaſe, and employ'd in cleanſing the Body; on which account it is moſt ſalutary, and indicates a ſafe and ſpeedy Criſis and Solution of the Diſeaſe.

Of the Signs which indicate *Vomiting*, we have the following Account from *Hippocrates* in the *Prognoſtics*: *If a Perſon*, he ſays, *not ſeized with a mortal Fever, tells us that his Head aches, or that a Miſt appears before his Eyes, or that he has a gnawing Pain at the Mouth of his Stomach, bilious* Vomitings *are at hand. If he be, alſo, under a Rigor, with a Coldneſs of the Parts about the Hypochondria, the* Vomiting *may be expected ſtill ſooner; and if he eats or drinks at this Juncture, he will vomit immediately.* And 1 *Epid. Sect.* 2. we are told, that they who were affected with burning, or other epidemic Fevers incident to that Conſtitution of the Seaſons there deſcribed, *and were oppreſſed with a Heavineſs of the whole Head, attended with a Cardiogmos, and a Nauſea, had thoſe Symptoms ſucceeded by a* Vomiting *of bilious and pituitous Matter. Galen*, in his Book of *Criſes*, ſays, that the Signs of *Vomiting* are, a gnawing Pain at the Mouth of the Stomach, with a Pain of the Head, a Scotomy, an Agitation of the lower Lip, and a Flux of much thin Spittle from the Mouth; and theſe not attended with Signs of an Hæmorrhage, Sweat, Flux of the Belly, or an extraordinary Flux of Urine, the Menſes, or Hæmorrhoids. But the Author of the *Coac.* 142. gives us only three Signs of *Vomiting*; which are, a Nauſea, Cardiogmos, and Ptyaliſmus, or Flux of Spittle. In a Phrenſy *Galen* affirms, that frequent Spitting alone foreſhews *Vomiting*.

Theſe, then, are the Signs which indicate *Vomiting*; and ſo, without inſiſting more largely or accurately on this Head, we proceed to what we principally intend here, which is, to give the proper Marks and Characters by which we may diſtinguiſh thoſe *Vomitings* which are good, uſeful, and ſalutary.

For lean or thin Bodies, which are prompt and eaſy to vomit, Expurgations by *Vomitings*, in the Summer Seaſon, are uſeful and proper; as we are taught by *Hippocrates*, 4 *Aph.* 4. 6. eſpecially in Diſorders of the Parts ſeated above the Diaphragm, *ibid.* 18. where we read, that *Pains above the Diaphragm indicate Purgation by* Vomiting; *Pains below that Part, Purgation by Stool.*

As to Subſtances diſcharged by *Vomiting*, we read, in the *Prognoſtics*, that *Vomiting* is moſt ſerviceable when the Matter evacuated is moſtly a Mixture of Bile and Phlegm, and not very thick, nor much in Quantity. *Galen*, *Com. in* 4 *Lib. Aph.* ſays it is good for bilious *Vomitings* to ſucceed a Rigor; becauſe they indicate a Solution in a burning Fever, from an Expurgation of the Cauſe; whence not all *Vomitings* are good and ſerviceable, but only ſuch as critically diſcharge a Multitude of bilious Humours. And not only bilious, but pituitous *Vomitings*, if critical, are beneficial; ſince *Hippocrates*, 6 *Epid. Sect.* 1. *Aph.* 5. commends pituitous, as well as æruginous *Vomitings*, in Pains of the Kidneys: And *Galen*, *Com. in* 5 *Aph.* 1. aſſures us, that æruginous *Vomitings* have proved ſalutary in *Convulſions*; and ſpeaks of a young Man, who under violent Vomiting was convulſed in all Parts of his Body; but as ſoon as he had diſcharged an æruginous Matter, his Fever and Convulſions immediately ceaſed. *Hippocrates*, in his Book *de Priſca Medicina*, touches very elegantly upon the Benefit of this Expurgation of bilious Humours. "When a kind of Bitterneſs, he "ſays, which we call yellow Bile, is effuſed, what Anxieties, "burning Heats, and unruly Diſorders, immediately ariſe! "But when we become free from this Humour, and the ſame "is diſcharged, either ſpontaneouſly, or by the Help of Medi-"cines, provided it be done either way in Seaſon, we find ma-"niſeſt Relief from our Pains and Heat." And a little after, "When Perſons are moleſted with a ſharp, acrid, and æru-"ginous Bile, what furious Paſſions, what Gnawings of the "Viſcera and Thorax, with Deſperation and Deſpondency of "Mind, ſeize upon them! Nor are any of thoſe Symptoms "removed before the peccant Humour is purged off, ſubdued, "and mixed with others."

Hence we conclude, that all *Vomitings*, which duly evacuate the Humours, which are the Cauſes of Diſeaſes, are good: They are, alſo, as we before obſerved, called *critical*; the proper Marks or Qualifications of which are, that they appear when the Diſeaſe is in a State of Concoction, that is, when Signs of Concoction have preceded; that they happen on critical Days; that they be conformable to the Nature of the Diſeaſe; and, above all, that they entirely remove the Symptoms of the Diſeaſe; or, at leaſt, alleviate and diminiſh them. And this agrees with what *Hippocrates* has determined, 1 *Aph.* 2. where we read, that "ſpontaneous Evacuations by Stool or "Vomit, if the Matters diſcharged are ſuch as require an "Expurgation, are beneficial, and eaſily ſupported; if other-"wiſe, the Effect is contrary." Of the Marks or Signs of critical Excretions, we find the Author of the *Coac. Præn.* thus ſpeaking, *T.* 77. "In a continual Fever, if the Patient "lies ſpeechleſs, with his Eyes ſhut, and now-and-then twink-"ling, if he be ſeized with an Hæmorrhage from the Noſe, or "with Vomiting, ſucceeded by a Return of his Speech and "Senſes, he recovers."

Thoſe *Vomitings*, alſo, are ſalutary, which are attended with other good Evacuations: Of this Nature was the bilious *Vomiting* of the ſick Woman in the *Strand*, who was three Months gone with Child, 1 *Epid. Sect.* 3. *Ægr.* 13. on the fourteenth Day of her Illneſs, and attended with a Sweat, ſucceeded by a perfect Criſis, and Removal of the Fever.

Vomitings without Signs of perfect Concoction, though they may be good, and alleviate the Diſeaſe, and diminiſh its Symptoms, yet they promiſe no Recovery till after a long time, and many Relapſes. Such was the *Vomiting* of the Wife of *Epicrates*, 1 *Epid. Sect.* 3. *Ægr.* 5. who "on the fifteenth "Day was ſeized with frequent Vomitings of bilious, yellow "Matter; ſweated, and was free from a Fever; but towards "Night had a high Fever, and diſcharged a thick Urine, with "a white Hypoſtaſis." Here the Criſis and Recovery were delayed till the eightieth Day.

Vomitings of a pernicious Tendency, ſuch as the black, pure, and others, if the Diſeaſe under which they happen be pretty favourable, portend not Death, but a long Diſeaſe, and Relapſes. Thus of the Patient laſt mentioned it is ſaid, that "about the twentieth Day, in the Morning, ſhe had a ſmall "Return of a Rigor, lay under a Coma, ſlept quietly, and "vomited bilious and black Matter, in ſmall Quantities." Another Example we have in *Cleonactides*, 1 *Epid. Sect.* 3. *Ægr.* 6. who, alſo, recovered not till the eightieth Day; and was obſerved by *Hippocrates* "on the twenty-fourth Day to "be affected with a Pain in the Extremities of the Hands, and "to vomit up a yellow, bilious Matter, at pretty frequent "Returns, and, a little after, virulent Matter, by which all "the Symptoms were alleviated." Theſe *Vomitings*, as they indicated ſome ſort of Concoction of the Urine, which, it is ſaid, "was during all the time thin, but not colourleſs," ſince it was of a good Colour, (which, according to *Galen*, in his Comment on the Caſe of the Virgin of *Abdera*, 3 *Epid. Sect.* 3. *Ægr.* 7. is the greateſt Sign of Recovery in thoſe who labour under a Redundance of Humours) and alleviated the Diſeaſe, and its Symptoms, were juſtly to be accounted ſalutary, and procured a ſalutary, though imperfect Criſis, from which might be prognoſticated a future Recovery, though at a good Diſtance of time.

We conclude, then, that all *Vomitings* in acute Diſtempers, which alleviate the Diſeaſe, and render it more ſupportable to the Patient, are ſalutary; but thoſe which are not good in their own Nature, ſuch as pure, æruginous, black, fetid, virulent, ſcanty, and particoloured Vomitings, if the Diſeaſe be of the milder ſort, and not in an abſolutely crude State, are Prognoſtics that the ſame will be long, if not mortal, and attended with much Pain and Trouble, and frequent Relapſes.

A ſpontaneous *Vomiting*, ſucceeding upon a long Diarrhœa, is ſaid by *Hippocrates*, 6 *Aph.* 15. to remove the Diſorder; and bilious *Vomitings*, in a Woman of a bilious Conſtitution, whoſe Menſes flow'd in leſs Quantity than was requiſite, are by the ſame Author, 1 *Epid.* pronounced good.

Of deſtructive VOMITINGS *portending Death.*

Vomitings of a bad Kind, portending a fatal Event, happen in the Beginning of the Diſeaſe, or ſoon after; and are attended with none, or, at leaſt, very obſcure Signs of Concoction; for, at ſuch times, Nature, as has been obſerved, makes no due Excretions, according to that 2 *Epid. Sect.* 1. "Critical Sym-"ptoms determining for the better appear not preſently." The Nature of deſtructive *Vomitings*, then, appears, in the firſt Place, from their happening in the Beginning of a Diſeaſe, and being attended with Signs of Crudities.

Secondly, Exceſſive Evacuations by *Vomiting*, which exhauſt the Strength, indicate a depraved Excretion; and copious Diſcharges this way, under a violent Diſorder, if they relieve not, in ſome meaſure, the Patient, portend his Death; and with the greater Certainty, if accompanied with other pernicious Signs; but moſt certainly and infallibly, when they are in their own Nature deſtructive; as when they are *porraceous*, *livid*, *æruginous*, *black*, *particoloured*, *virulent*, *fetid*, *pure* or *unmixed*, and *ſcanty*, or diſcharging ſmall Quantities of Matter; of which we are to treat ſingly: Theſe Kinds of *Vomitings* were obſerved by *Hippocrates* in the phrenetic Patient, 3 *Epid. Sect.* 3. *Ægr.* 4. the Woman who lay ill *in Foro Mendacium*, *ibid. Sect.* 2. *Ægr.* 12. and the Son of *Hegetorides*, 7 *Epid. ſub T.* 61. a little before their Death.

Small and *ſcanty* Excretions by *Vomiting* in acute Diſeaſes, are one of thoſe Signs, which, as *Galen* ſays, *Com.* 2. *in* 1 *Prorrhet. T.* 47. are in the Whole to be regarded, as of bad

Signs-

Signification. For an Evacuation truly critical ought not to be in ſmall Quantities, ſince a ſcanty Diſcharge, of what Kind ſoever, indicates either an intolerable Redundance of the morbific Matter, too copious to be ſuffered by the affected Parts, or the Imbecillity of Nature, which propoſes to itſelf an Excretion of Superfluities, but is too weak to effect it. Hence it appears, that ſcanty *Vomitings* are of the Number of critical Signs which determine nothing, and always indicate a difficult and dangerous, and generally a mortal Criſis, or Turn of the Diſeaſe, eſpecially if they are, beſides, bad in their own Nature; and are ſo far from relieving the Patient, that they reduce him to a worſe State than he was in before.

Pure, *ſincere*, or *unmixed Vomitings*, in acute Diſeaſes, are very bad; becauſe the excreted Humour is not only crude, but indigeſtible, as excluding not only the Act, but the Power of Concoction. *Hippocrates*, *Lib. Prognoſt.* beſtows the Epithet of ἄκρητον [from *a* Negative, and κεράννυμι, to mix] on whatever Humour is void of Mixture, or every crude and fervid Excretion which is not diluted with its proper Serum, but owes its Generation to the Diſorder of ſome Part, or to the Fervor of the febrile Heat, by which the aqueous and ſerous Part is conſumed. This Kind of Excretion, therefore, by *Vomiting* in acute Fevers, indicates a violent internal Heat, and ſuch as generally proves too ſtrong for Nature. If it be attended with other bad Signs, it is of fatal Prognoſtication: Hence the Author of 1 *Prorrhet.* ſays, that "Pure and unmixed Vomitings, attended with much Nauſeating and Anxiety, are bad." And *Hippocrates*, *Prognoſtic.* tells us, that "The purer or more "unmixed Vomitings are of the worſt Sort."

The ſame Author, in the Treatiſe juſt mentioned, paſſes his Judgment on bad Vomitings, with reſpect to their Colours, where he ſays, "If the Matter diſcharged by Vomiting be porraceous, or livid, or black, any of theſe Colours is to be "eſteemed bad; but if the Excretions be of all theſe Colours, "it is a moſt fatal Prognoſtic; but if the Matter be of a livid "Colour, and, alſo, fetid, it ſhews Death to be very near." All theſe Colours in Excretions by Vomiting are very bad; but porraceous, æruginous, livid, black, and fetid Subſtances may ſometimes be vomited critically, though never but in a concocted State of the Diſeaſe, that is, at its Height or Decline; and then they will be ſure to effect an entire Solution of the Fever, or at leaſt an Alleviation of it and its Symptoms. However it ſeldom happens, that Subſtances are critically excreted of theſe Colours; and therefore, in a violent continual Fever, where no Signs of Concoction have as yet appeared, they are to be eſteemed moſt certain Signs of Death.

Vomitings of different Colours are, in their own Nature, very bad, becauſe, as *Galen* ſays, they indicate a Variety of Diſorders affecting the internal Parts: Whence the Author of 1 *Prorrhet.* *T.* 60. tells us, that "Vomitings of various Co"lours are bad; and eſpecially if they are diſcharged at ſhort "Intervals," that is, as *Galen* ſays, follow faſt one upon another.

Virulent, alſo, or æruginous Vomitings are, for the ſame Reaſon, mortal in acute Diſeaſes, and moſt of all in a Phrenſy, becauſe they indicate the Brain to labour under a deadly Inflammation from an aduſt Bile. To this Purpoſe is the Obſervation of *Hippocrates*, 1 *Epid. Sect.* 2. where we read, that the epidemic Phrenſies ended in Convulſions, and æruginous Vomitings, under which ſome of the Patients died ſuddenly. And of the phrenetic Patient, 3 *Epid.* that "On the firſt Day of the Decubiture, he vomited much thin "virulent Matter, and had a Fever, attended with an Hor"ror." For *æruginous*, which we ſuppoſe we may, alſo, call *virulent Vomitings*, to happen after bad and deſtructive Signs, portend Death unavoidable; for mortal Signs, ſucceeding one upon another, ſhew the Caſe to be deſperate. Theſe kinds of Vomitings, attended with Pains of the Head, Watchings, or Deafneſs, which are Signs of an Inflammation of the Head, indicate an approaching Mania, 1 *Prorrhet.* 10. From the Premiſes we infer, that æruginous or virulent Vomitings indicate, in the firſt place, the near Approach of a deſtructive Diſorder, as Delirium, Madneſs, and Mania, or Melancholy, attended with a Ferocity, and, at laſt, Death with Convulſions; ſince, as we have elſewhere declared, it is the Nature of theſe Kinds of Delria, on account of an extraordinary Dryneſs, occaſioned by an intenſe Degree of Heat, to end, at laſt, in Tremblings and Convulſions.

Fetid Vomitings ſeem to indicate no leſs Danger, but are rather moſt certain Prognoſtics of Death, as being, in their own Nature, extremely bad and deſtructive, according to the *Prognoſtics*, where it is ſaid, "That Vomitings of a livid Colour, "if they have, alſo, a fetid Smell, portend very ſpeedy Death; "and all ſubputrid and fetid Smells in Vomitings are bad." The Woman who lay ill *in Foro Mendacium*, 3 *Epid.* before her Death, vomited black and fetid Matters.

All bilious, that is to ſay, yellow, croceous, porraceous; and all Vomitings accompanied or preceded by bad Signs, are pernicious; and if reducing the Sick to a worſe State than before, deſtructive: Thoſe of the former kind are to be eſteemed among thoſe Pſeudo-critical Signs, which determine nothing; but indicate a doubtful future Criſis; and, in the laſt Caſe, they appear to portend nothing but Death; and with the more Certainty, if they happen to be malignant. To this Purpoſe is that in 1 *Prorrhet.* 62. before-quoted, "Pure or unmixed "Vomitings with Anxieties are bad." And, *ibid.* 72. "They "who vomit up black Matters, and are affected with a Nau"ſea, accompany'd with a Delirium, and a ſlight Pain in the "Pubes; who have a fierce Look, and ſhut their Eyes, ought "not to be purged, becauſe Purging would prove deſtructive "to them." And a little after, *T.* 79. we are told, that "Scanty and bilious Vomitings are bad; and eſpecially when "attended with Watchings: Blood falling by Drops from the "Noſe, in this Caſe, is, alſo, bad." Of this Nature were the Vomitings obſerved by *Hippocrates*, in the ſick Woman *in Foro Mendacium*, 3 *Epid. Sect.* 2. *Ægr.* 12. "Who, he "ſays, on the twelfth Day vomited much black fetid Matter, "and was much affected with the Hiccough, and a trouble"ſome Thirſt: On the thirteenth ſhe brought up great Quan"tities of black virulent Matter, had a Fit of a Rigor, and "about Noon was ſpeechleſs."

All Vomitings which give no manner of Relief to the Patient, are bad; but thoſe which render his State worſe, are very pernicious, though they happen not to be malignant: Thus they proved in the Caſe of the Woman before-quoted, of whom we read, that "On the eighth Day, about Noon, ſhe "recovered Heat, was thirſty, under a Coma, with a Nauſea, "and vomited ſmall Quantities of a bilious yellowiſh Subſtance; "at Night was very ill, took no Reſt, and made great Plenty "of Water, which flowed from her imperceptibly." This Woman, if her bilious Vomitings had been good, ſhould have reſted, and found herſelf better; and thus it ought to have been, alſo, after the Vomitings on the ninth Day; whereas, on the tenth, the Fever was exaſperated: And on the eleventh Day, after ſome bilious and virulent Vomitings, ſhe was taken with a Rigor, her extreme Parts were cold, and ſhe fell afterwards into a cold Sweat; and though ſhe had vomited plentifully that Day, yet ſhe had a very troubleſome Night. All theſe Vomitings were of deadly Signification, as appearing not only in a violent Diſorder, but attended with other bad Signs, and producing a Mutation in the State of the Patient for the worſe; which laſt is the proper Character of all uſeleſs and remarkably bad Signs.

In Wounds of the Head, alſo, bilious Vomitings are bad; according to *Hippocrates*, 6 *Aph.* 50. "A Cut received by the "Brain is neceſſarily ſucceeded by a Fever, and Vomiting "of Bile."

Vomitings in the Iliac Paſſion are, alſo, very pernicious, as appears from 7 *Aph.* 10. where we read, that "Vomitings, "the Hiccough, a Delirium, or Convulſions, ſucceeding the "Ileos, are bad." Here *Galen*, in his Comment, ſays, "That "in the Ileos nothing deſcends to the lower Parts; and that this "is an inſeparable Property of that Diſorder. But Vomiting "is not always a Symptom; but when the Diſeaſe is mortal, "and the Patient violently racked, the Excrements aſcend, "and a Hiccough ſucceeds." And *Lib.* 6. *de Loc. affect.* he ſays, that "He never knew one who vomited up his Excre"ments ever recover."

Theſe, then, are the Vomitings which are juſtly to be dreaded in acute Diſeaſes, the immoderate, ſcanty, yellow, red, porraceous, æruginous, livid, black, fetid, pure, particoloured, which happen in the Beginning of Diſeaſes, where no Signs of Concoction have preceded. In ſuch a Circumſtance they are generally mortal; and if the Diſorder be violent; and if other bad Signs appear together with them, or precede, or follow them, they are to be regarded as certain Prognoſtics of Death; eſpecially when, as we obſerved, they in no manner relieve the Patient, but rather alter his Caſe for the worſe. *Proſper Alpinus*, *de Præſag. Vit. & Mort. Ægrot.*

Febrile Debility.

Great Debility ariſes from an Impediment to the Influx of the nervous Fluid into, and its Preſſure upon, the Muſcles.

This Impediment may be, an Emptineſs of the Canals, when the Fluid they ſhould convey is exhauſted; or an Immeability of the Fluid; or an Obſtruction, or Compreſſion of the Canals, eſpecially near their Origins in the Cerebrum, or Cerebellum; or a Weakneſs of the Heart, thus rendered incapable of furniſhing the Brain with a Quantity of Blood, ſufficient for the due Secretion of the nervous Fluid.

That the Impediment to the Influx of the nervous Fluid into, and its Preſſure upon, the Muſcles, and the conſequent

Weakneſs, ariſe from the Emptineſs of the Veſſels, is known from the preceding or preſent Symptoms of large Evacuations, and from the long Duration of the Diſeaſe they accompany or ſucceed; from morboſe or artificial Hæmorrhages; Sweats; a Diabetes; Salivation; or Diarrhœa; from a Defect of Aliment, with Reſpect to its being taken in, its Retention, Digeſtion, and Conveyance to the Blood; from Paleneſs, a Smalneſs of the Pulſe, collapſed Veſſels, and flaccid Muſcles.

That they ariſe from an Immeability of the Fluid, may be diſtinguiſhed from what has been ſaid under the Article LENTOR.

That they are cauſed by Obſtructions, may be known from the Doctrine of Obſtructions, given under the Article OBSTRUCTIO.

We diſtinguiſh, that a Compreſſion of the Cerebrum and Cerebellum is the Cauſe of Debility, when we perceive thoſe Functions injured, which depend upon the Integrity of theſe Organs; as in caſe of Deliria, profound Sleep, Tremor, Vertigo, and Ringings in the Ears.

That Debility ariſes from a Weakneſs of the Heart, is known by the Signs of a languid and deficient Circulation. See PLETHORA.

Liquid Aliments, nearly approaching the Nature of the Blood, which are previouſly digeſted by Art, gelatinous, and mild, and artfully impregnated with vinous and aromatic Subſtances, if exhibited frequently, and in ſmall Quantities at a time, ſerve excellently to fill the exhauſted Veſſels, gentle Frictions of the Extremities being uſed at the ſame time; particularly if theſe are prepared of proper Materials, oppoſite to the Nature of the Diſeaſe.

Among theſe Aliments are the Broths made of Beef, Veal, Mutton, and Fowls of the gallinaceous Kind, either ſeparate, or mixed together, with the Addition of Salt, and Lemon-juice; new Milk; and the Decoctions of Bread, mentioned under the Article FIBRA.

That Species of Debility ariſing from an Immeability of the Fluid, is to be cured by the Methods recommended under the Articles LENTOR, and OBSTRUCTIO.

That cauſed by an Obſtruction of the Canals, is to be relieved by the Methods conſidered under the Article OBSTRUCTIO.

That Species which ariſes from a Compreſſion of the Cerebrum, and Cerebellum, is generally cured by ſuch Applications near the Part affected, as are capable of removing the impacted obſtructing Matter, and of deriving the Force thereof to other remote Parts. The Noſtrils, therefore, Head, Face, Mouth, and Neck, are to be moiſtened with mild Fomentations; and Epiſpaſtics are to be applied to the Feet.

The debilitated Heart uſually recovers Strength very ſlowly: But the general Methods of removing Debility, recommended above, may do ſome Service.

From what has been ſaid, we may learn, how little the Uſe of Cardiacs in acute Diſeaſes is underſtood: And that Debility, in Fevers, is frequently an inſuperable Symptom.

FEBRILE HEAT.

External Heat may be determined by a Thermometer; internal, by the Senſation of the Patient, and Redneſs of the Urine.

A greater Quantity of Fire is always preſent in that Part which is moſt hot.

This increaſed Quantity of Fire ariſes from a more violent Attrition of the fluid Parts of the Body on each other, and on the Veſſels, and of the Veſſels reciprocally on theſe.

This violent Attrition is cauſed by a ſtrong Motion of the Fluids from the Heart, and a great Reſiſtance of the Veſſels to the Force of the Heart.

This Motion is to be eſtimated, by the Denſity of the Blood impelled from the Heart, and its Velocity through the Veſſels.

The Denſity of the Blood is known by examining the Blood taken out of the Veſſels; by a preceding Diſſipation of the moſt fluid Parts; and by an Hardneſs of the Pulſe.

The Velocity may be calculated from the Number of Pulſations of the Heart, compared with the Magnitude of theſe Pulſations.

The great Reſiſtance is to be known by the Bulk of the inert Fluids to be moved; and from the Paucity, Narrowneſs, and Immobility of the Canals, which tranſmit them.

The Bulk of the Fluids is perceived by the Signs of a Plethora, or Cacochymia; or by a ſudden Solution of thoſe Liquids, which before were in a State of Stagnation, as of the Fat; but principally by an Inflation of the Veins, together with a quick and ſtrong Motion of the Arteries.

The Paucity of Veſſels is to be learned from the Hiſtory of Obſtructions, or of Wounds. See OBSTRUCTIO, and VULNUS.

The Narrowneſs of the Veſſels is known by the Sight, the Touch, a dry Temperament, and a great Increaſe of Heat, upon a very ſmall Degree of Motion.

The Immobility of the Canals which reſiſts their Dilatation, is learned from all the Signs of a Rigidity of the Fibres, Veſſels, and Viſcera. See FIBRA.

Upon ſo many Cauſes depends the Origin of Febrile Heat; which, however, may have a great Variety of other remote Cauſes.

But Heat may be increaſed, by an Increaſe of one of theſe Cauſes only; and, in this Caſe, the Increaſe of Heat is in proportion to the Cauſe.

But if two of the Cauſes are, at the ſame time, increaſed, the Heat is as the Product of the Increaſes of the Cauſes multiplied by each other.

And this Method of calculating will hold, with reſpect to the Accumulation of more Cauſes.

An increaſed Heat diſſipates the moſt liquid Parts of the Blood, that is, the Water, Spirit, Salts, and moſt ſubtile Oils; dries and condenſes the Reſt of the Maſs, and cauſes it to concrete into an immoveable, irreſoluble Subſtance; diſengages, attenuates, renders acrid, exhales, and moves the Salts and Oils: Hence the ſmalleſt Veſſels are fretted and broken; the Fibres are rendered dry, rigid, and contracted; and hence many acute, dangerous, and fatal Diſeaſes are produced, which may be accounted for from what has been ſaid relative to Heat.

From this Doctrine we learn, what is required to mitigate Heat; and how various the Remedies are which tend thereto.

Thus, if an increaſed Velocity of the Blood excites Heat, the Remedy is, whatever diminiſhes that Velocity: The principal of theſe are, Reſt of the Muſcles, and of the Mind; Veneſection; a ſlight Compreſſion of the Veins in the Limbs, continued a very ſhort time, by Ligatures; a gradual and cautious Application of cold Subſtances, both externally and internally; and Preparations of the Poppy prudently exhibited.

If Heat ariſes from the Denſity of the Fluids, it is cured by thoſe Remedies mentioned above, which diminiſh the Velocity; and by drinking Water, and Oxymel, and ſuch Medicines as relax the Veſſels.

The Bulk of the Fluids, in a Plethora, is eaſily diminiſhed; but in a Cacochymia, the Diminution is to be brought about by evacuating ſlowly, and at Intervals: But when the Fat, which was before ſtagnant, is reſolved, the greateſt Difficulty ariſes; in this Caſe, aqueous Fluids, impregnated with an Acid, Honey, the Yolks of Eggs, or Sugar, together with perpetually continued Evacuants, are of the utmoſt Importance, becauſe they render the Fat, or Oil, miſcible with the Blood.

The Cure of Heat excited by Obſtruction, may be learned from the Article OBSTRUCTIO; and that Part of the Article VULNUS, which treats of the Accidents ſupervening upon Wounds, attended with Loſs of Subſtance.

If Heat depends upon the Narrowneſs of the Veſſels, they are to be dilated by relaxing Remedies. See FIBRA.

And Heat ariſing from a Rigidity of the Veſſels, is removed by the ſame relaxing Remedies. See FIBRA.

When Heat is excited by many of theſe Cauſes combined, it muſt be removed by the proper Remedies above deſcribed, combined, alſo, together.

From all this Doctrine of Heat we learn, why a Fever, attended with exceſſive Heat, is acute, quick in its Progreſs, putrid, and, if there is the greateſt Degree of Heat, peſtilential: Why the Heat of a Bed, of Air confined, of Regimen and Medicines, muſt neceſſarily be, in ſuch Caſes, extremely prejudicial; and why Heat about the Heart and Hypochondria is of fatal Preſage.

From this Doctrine, alſo, the Origin, Nature, and Effects of Dryneſs may be underſtood; and the Cure may hence be learned, which conſiſts in the Exhibition of Drinks, Fomentations, Baths, Cliſters, and Gargariſms, which are aqueous, ſomewhat acid, impregnated with Honey, and relaxing. *Boerhaave.*

PROGNOSTICS IN ACUTE DISEASES FROM HEAT.

Since Heat, Coldneſs, Dryneſs, Humidity, Softneſs, Aſperity, and Pains, have relation to the Senſe of Feeling, and furniſh us with Signs and Symptoms for Prediction, as good and firm as any taken from other Heads, we think ourſelves obliged to treat of them diſtinctly, with regard to our Subject of *Prognoſtication.* And here, firſt, we ſhall begin with Heat, from whence, the Obſervation of other Signs not being neglected, may be drawn Preſages of Life and Death.

Heat, then, it muſt be obſerved, with relation to Prognoſtics, is either mild, or tepid, or high and vehement. A mild and gentle Heat is always good, eſpecially if, according to *Hippocrates*, in his Book of *Prognoſtics*, it be attended with an equal Softneſs of the whole Body, or be like the Heat of the

the ſame Perſon when in Health. The Fleſh of ſome Perſons in Health is obſerved to be cool; of others temperately hot; of others again, hot to a pretty high Degree: Whence, if the Heat of the Sick be much the ſame as uſual in a State of Health, it is a good Sign: And hence it is, that ſometimes an high and vehement Heat, and ſometimes a moderate Degree of the ſame, or Coolneſs, are laudable in the Patient, on account of their Approach to the Degree of Heat familiar to the Body whilſt in Health: And the like Judgment is to be formed of the Urine, and other Excretions, which, if reſembling thoſe uſually diſcharged in time of Health, are eſteemed good. It is beſt, therefore, when the Body, under a Diſeaſe, ſuffers little or no Alteration with reſpect to Heat.

Of febrile Heat, the beſt Kind is what is mild, temperate, equal in all Parts of the Body, and united with a ſort of Humidity, in which it chiefly reſembles the natural Heat, which, as *Galen*, *in* 2. *de Natur. Hum.* tells us, is not only temperately hot, but, alſo, humid, in Oppoſition to acute and igneous, which kind of Heat is moſt contrary to the *natural*. This temperate Degree of Heat, therefore, will always be beſt, unleſs it happens, that we are deceived by the Malignity of the Diſeaſe: For there are ſeveral *malignant* Diſtempers, attended with a mild and gentle Heat, extremely like the natural; the Heat, in reality, being confined to the inward Parts, and not freely diffuſed abroad; for which Reaſon this good Heat muſt be accompanied with an equal Softneſs of the whole Body, as required by *Hippocrates*, in his *Prognoſtics*: "It is beſt, he "there ſays, for the whole Body to be equally hot and ſoft;" for an equal Softneſs diſtinguiſhes a good Heat from bad ones, ſince the Heat of a Patient may ſeem to be temperate and equal, and yet proceed from a very malignant Diſorder. In ſuch a Circumſtance the State of the Sick is known, and diſtinguiſhed by an unequal Softneſs of the Body; where, in particular, the Hypochondria are commonly obſerved to be hard, and the Heat is by no means equally diffuſed over the whole Body; the extreme Parts, for Example, being leſs hot than the Belly, whoſe Region and Contents are under a more intenſe Degree of Heat. We conclude, therefore, that a temperate Heat, equally diffuſed over the Body, and united with an equal Softneſs, will always be a good Sign, ſince it is impoſſible for a Body, under ſuch an equal Heat and Softneſs, to be fatally ſick; the Union of theſe Properties being a ſure Indication, that the Viſcera are free from a Phlegmon, Obſtructions, and any conſiderable Degree of Putridneſs.

An equal Softneſs of the whole Body diſtinguiſhes, alſo, a good from an hectic Heat, which latter being ſometimes obſerved mild and gentle to the Touch, has given Occaſion to miſtake the Caſe of an hectical Patient: But an hectic Heat is not uſually attended with a Softneſs, but rather with a Squalidneſs; and an Hectic Fever is not only known by this Mark, but, alſo, by an Inequality of the Heat itſelf: For the Fever, as *Galen*, on the *Prognoſtics*, obſerves, is exaſperated after taking Food.

The beſt Heat, therefore, is what is temperate, equally diffuſed over the whole Body, and united with an equal Softneſs of the Fleſh. And not only an Heat thus qualified, but even an intenſe and vehement Heat, diffuſed over all Parts of the Body in burning Fevers, is not to be condemned, ſince it is a Property of malignant burning Fevers, as *Galen* on the *Prorrhetica* obſerves, not to heat the outer Parts; as it is, on the contrary, of thoſe which are not malignant, to put the whole Body in an equal Degree of burning Heat, even to the outermoſt Parts, by which they indicate, as *Galen* tells us, on the *Aphoriſms*, the Viſcera to be free from any violent Inflammation.

It is, alſo, often beſt, and moſt deſireable, for preſaging a Recovery in acute Diſorders, for ſome Parts of the Body to grow hot, or kindle into an extraordinary Degree of Heat, eſpecially the Parts towards the Skin, upon which Nature often diſcharges and depoſites both the Vehemence of the Heat, and the peccant Humours. For the extreme Parts, in ſuch Caſes, to undergo an extraordinary Degree of Heat, is a very hopeful Sign; as the contrary is of bad Prognoſtication: Hence a Coldneſs of the extreme Parts in acute Diſeaſes is a very bad Symptom, as, on the other hand, an Heat in the ſame Parts is a good Sign, as indicating the internal Viſcera to be free from any great Phlegmon, Inflammation, or conſiderable Putrefaction of Humours; and that Nature is not oppreſſed with a Multitude of Crudities. It, alſo, ſignifies, that the febrile Heat has left the Viſcera, and diſcharges itſelf upon the remote Parts; or, that the noxious Humours are propelled and depoſited upon the ſame; for an extraordinary Heat extending itſelf to the Feet, is, in many Caſes, a Sign of the Decline of the Diſeaſe: Whence we are directed by *Hippocrates*, *de R. V. I. A.* in the Decline of a Fever, when the Heat deſcends to the Feet, to offer the Patient Food.

An Heat of the extreme Parts, attended with a Redneſs and Inflammation, is, alſo, a good Prognoſtic. In Confirmation hereof we are told by *Hippocrates*, in his *Prognoſtics*, that "The Patients [under a Quinſey] are very much relieved, if "the Neck and Breaſt contract a Redneſs, and the Eryſipelas "returns not upon the inward Parts." And a little after he ſays, "It is ſafeſt when the Tumor and Redneſs are for the "moſt part turned outwards."

Having made theſe Obſervations concerning good and ſalutary Heats, we are to take ſome Notice of the contrary to theſe, or the bad and pernicious; of which Nature is, firſt, an Heat of the Body, attended with a Colliquation and Tabes; ſuch is the Heat of Hectics, which, unleſs corrected before it has colliquated the ſolid Parts, infallibly brings the Patient to the Grave. This kind of Heat is equal and uniform, acute, and not very obvious to the Touch and Senſes; on which account an hectic Fever, in the Beginning, eſcapes the Knowledge of many Practitioners. *Galen*, as we have obſerved in another Place, in his Comment on the *Prognoſtics*, has taught us to know this Heat by the following Signs: "By an Hectic "Fever the ſolid Parts of the Body become ignited; for "which Reaſon the Fever remains conſtant to itſelf, without "Alteration, under an Heat weakly affecting the Touch, "after the manner of Lime-ſtone. As often, therefore, as "the Patient eats or drinks, it is much the ſame as if you "poured Water on Quick-lime; whence the Heat becomes "much more ſenſible to the Touch."

That uniform Heat, alſo, of the whole Body under a continual Fever, though amounting to no more than a tepid Warmth, or perhaps Coolneſs, is to be ſuſpected, as indicating the whole Force of the Burning to be contained within the Viſcera. *Galen*, in his ſecond Comment on *Hippocrates*, *de R. V. I. A.* and on the Book of the *Prognoſtics*, tells us, that "For the Body, under acute Diſeaſes, not to be hot in pro"portion to the Nature of the Fever, and to lie with the "Limbs naked, though cold or tepid, as if they were in a "burning Heat, is a Sign of Malignity." Such a tepid Heat, though never good, is, however, no ſure Prognoſtic alone, no more than a vehement Heat, which, though always bad in itſelf, will yet afford no certain Grounds for predicting a fatal Event; ſince, on the contrary, for the Body to grow hot to an intenſe Degree, after a Rigor, is a Sign to us of the near Approach of a Criſis; and therefore that Meaſure of Certainty which it may carry with it, muſt be taken from other Signs.

A vehement Heat, either of the whole Body, or only of the Thorax and Belly, if it continue long, is pernicious, ſince it exhauſts the Strength, dries and colliquates, and, if ſucceeded by Spaſms, portends Death; for Convulſions from ſuch a Cauſe as produces a Dryneſs of the Nerves, are all mortal. Hence *Hippocrates*, 7 *Aph.* 13. pronounces Convulſions, or a *Tetanus*, after violent burning Heats, a bad Sign.

A violent Degree of Heat, alſo, in the Face, or in the Hypochondria, or in the Thorax, is very bad; ſince the two latter indicate a Phlegmon of ſome one of the Viſcera; and the firſt an Inflammation of the Brain; though it muſt be confeſſed, that a firey Redneſs of the Face is not always a Sign that the Brain is thus affected, but, on the contrary, is ſometimes the Forerunner of a critical Hæmorrhage; but when it appears accompanied with ſome other pernicious Sign, it foreſhews a bad Event. Hence we read, 1 *Prorrhet.* 49. "That a good "Colour in the Face, with a very ſtern and ſour Aſpect, is a "bad Sign." For, as *Galen* ſays, when the Face is of a florid Colour, and the Countenance remarkably ſour and ſad, it indicates the Brain to labour under ſome very hot Affection, by which the Blood is rendered aduſt. A very high and firey Redneſs of the Face, attended with Sweating, is, by the ſame Author, pronounced a Sign of Malignity, and a juſt Ground for predicting a fatal Event to the Diſeaſe, ſince it indicates a great Inflammation of the Brain, which is reckon'd among mortal Diſtempers, as the Sweat, alſo, which in no meaſure relieves the Patient, is one of the pernicious Signs. The ſame is confirmed, and in a manner repeated, 1 *Prorrhet.* 67. where it is ſaid, that "Burning Rigors are, in ſome meaſure, pernicious, "and a firey Redneſs of the Face, with Sweating, in ſuch "Caſes is bad."

An Eſtuation, or intenſe Heat in the Belly, or Thorax, is always bad, for it often indicates ſome great and deadly Diſorder in thoſe Parts; as when it proceeds from a great and malignant Phlegmon of one of the Viſcera. In this Caſe the extreme Parts are either tepid or cold; agreeably to what we read 1 *Prorrhet.* 7. where it is ſaid, that "Thoſe burning "Heats which remain in the Hypochondria, after a general "Refrigeration, are bad at all times, but eſpecially when at"tended with Sweats." And more expreſsly to the Purpoſe, in 4 *Aph.* 48. "In Fevers not intermittent, if the outward "Parts are cold, whilſt the inward burn with Heat and la"bour under a Thirſt, the Caſe is mortal."

In Fevers, a vehement burning Heat about the Stomach, with a CARDIOGMOS [ſee that Word], is bad, 4 *Aph.* 64.

And

And burning Heats in the Sides, attended with Pain, and a Rigor, are condemned by the Author of 1 *Prorrhet.* 66. "For "a burning Heat in the Side, attended with a Pain, says *Ga*- "*len* on the Place, is a Sign of a Phlegmon infesting that "Part; and if a Rigor supervenes, expect a Suppuration of "the Phlegmon." Now a Suppuration of a Phlegmon of the Viscera is seldom cured; but, when the Strength is much exhausted beforehand, never at all.

For the Patient, after some preceding Evacuation, to be so far from being relieved from his Fever, that he perceives an Increase of Heat, it is bad, according to 1 *Prorrhet.* 66. where we are told, "That a Return of the febrile Heat, after Re- "frigeration from Sweats, is bad; and burning Heats in the "Sides, with Pain, and a supervening Rigor, are bad." "For, "as *Galen* says in his Comment, if any Person under a Dis- "ease, after Sweating, grows colder than Nature requires; "and afterwards becomes severish again, his Case is not free "from Danger." Again, the Author of 1 *Prorrhet. T.* 68. says, "That a Return of the febrile Heat, after Watchings "and Sweating is bad." And the same is repeated *Coac.* 41.

We may add, with relation to this Subject, that for refrigerated Bodies to be almost totally incapacitated for recovering Health, is highly pernicious in acute Diseases, as it is occasioned by an Extinction, Resolution, or Suffocation of the natural Heat. And the Case seems to be no less mortal, if the Symptom be observed of the exterior and outermost Parts of the Body, or if these are hardly capable of recovering Heat. To this Purpose we read, 1 *Epid. Sect.* 1. *Stat.* 1. that in a very mortal epidemic Fever, the Patients were much affected with Refrigerations of the extreme Parts, and that it was scarce possible to recal the Heat into them.

For Bodies, also, in the last Place, to be soon heated, and soon cooled, is a bad Sign; for it shews, as *Galen* says, the Disease to be highly malignant, and if not mortal, yet of long Continuance: But in acute Diseases, which speedily exhaust the Strength, the same Symptom portends Death. *Prosper Alpinus, de Præsag. Vit. & Mort.*

Prognostics in acute Diseases from Humidity and Dryness.

We sometimes form Presages in acute Distempers, from the Humidity or Dryness of the whole Body, or of some of its Parts. In those who die of an Empyema, or a Phthisis, may often be observed a little before their Decease, a copious Humidity, sometimes diffusing itself over the whole Body, sometimes no farther than the Legs and Belly. And *Hippocrates*, *Lib. Prognost.* pronounces a Dropsy in or from acute Diseases, mortal, as proceeding from an utter Decay of the natural Heat. "Dropsies, he there says, caused by an acute Disease, are "bad; for they remove not the Fever, but increase the Pain "and Sickness, and end in Death."

Deficcations, Dryness, and Hardness, either of the whole Body, or of any of its Parts, give, also, frequent Occasions for prognosticating an unhappy Event in acute Disorders. A Dryness and Extenuation of the whole Body, after a long Burning Fever, are just Grounds for presaging an hectic Habit of Body, terminating at last in Death, as every one versed in Medicine knows. An extraordinary Dryness, also, of the Forehead, Tongue, and other Parts, pretty often portend a fatal Event, as it did, for Instance, in the Case of the young Man of *Melibœa*, 3 *Epid. Sect.* 3. *Ægr.* 16. who, before his Death, was observed by *Hippocrates*, to have the Skin of his Forehead extremely dry and tense. *Prosper Alpinus, de Præsag. Vit. & Mort.*

Febrile Delirium.

A Delirium is a Production of Ideas not corresponding to external Causes, but excited by the internal Disposition of the Brain, whilst the Judgment is conformable to such Ideas, and the Affections of the Mind, and Motions of the Body, correspond therewith: And these, either alone, or combined, form various Species of Deliria.

It always, therefore, witnesses a morbose Affection of the medullary Part of the Brain, which may arise from any kind of Obstruction; from an Impediment to the Influx, Transflux, or Efflux of the Fluids, through the Brain; from a violent Velocity, or Stagnation, of the Liquids, and many other Causes, which must be investigated with the utmost Diligence, in order to acquire a just Knowledge of the Method of Cure.

For various Remedies, and Methods of Cure, must be adapted to the various Causes; among which the principal are, Baths for the Feet; Epispastics apply'd to the Feet and Legs, and Frictions of these Parts; diluting Clysters frequently administred; a thin Diet; sedative, deobstruent, and diluting Potions; emollient Applications to the Head; gentle Anodynes; Bleeding in the Feet; and exciting the hæmorrhoidal, or menstrual Flux.

For an Account of Prognostics from a *Delirium*, see the Article Delirium.

A Febrile Coma.

A *Coma* is a perpetual Inclination to sleep in a Fever, either with, or without Sleep; and always witnesses such a State of the Brain, as prevents the Exercise of the Senses, and animal Motions. It may arise from a Deficience of the Arterial Fluid convey'd to the Brain; from an Impediment to its Circulation through the Brain; from an Impediment to the Secretion of the nervous Fluid from the Blood; or from whatever prevents the Flux and Reflux of the Spirits through the Nerves.

Hence various, and those often different, and even contrary Causes, may produce this Symptom, in a Fever; as all violent Evacuations, or Repletions; all glutinous, pinguious, or inflammatory Inspissations of the Blood; all Causes, of what kind soever, which may excite a Compression of the Brain, which may, also, have the same Effect, if they act upon the Nerves.

Hence appears the Necessity a Physician is under of investigating the particular Cause of a *Coma*, before he can determine what Remedies are to be apply'd, and *in what manner*: For, frequently, quite contrary Methods are required; and it often happens, that a *Coma* obstinate to all Remedies, ceases spontaneously, when the Concoction of the Fever is completed.

Those Remedies, however, recommended above in a *Delirium*, are proper in this Case; especially Fomentations apply'd to the Head and Neck.

But if there are Signs of a great Inflammation, it must be treated as an original Disease. See Phrenitis, and Somnus.

A Febrile Pervigilium, or obstinate Watching.

A *Pervigilium*, or obstinate Want of Sleep, is the direct contrary to a *Coma*; whence its Nature may be understood: It is caused by the first Tendency to a slight Inflammation of the Brain; an Increase of which often excites a *Coma*.

It is cured by Rest of the Muscles; Calmness of Mind; the Absence of all Objects of Sense; moderate Cold; a moist Air; mild and emollient Aliments; a gentle, continual, grateful, agreeably ringing hushing Murmur; farinaceous, suboleous, moistening, and demulcent Medicines; the Smell of soporiferous Vegetables; and the prudent Use of Anodynes, Paregorics, soporiferous Remedies, and Narcotics; always premising those Remedies, which are capable of checking and curing the Inflammation.

Of Prognostics in Diseases from Watching.

Watching, as well as Sleep, with respect to what they may portend, are to be considered first in their natural State; for when no Change or Alteration can be perceived on this Head, we have good Room and Opportunity for Prediction; since, if the Patient sleeps and wakes, according to Custom in time of Health, it is a good Sign, and gives Occasion to presage an happy Event. For it seems impossible for a Person to die of any Distemper, while his Times of Sleep and Watching remain entire, and without any manner of Alteration. On this Subject, *Hippocrates*, in his *Prognostics*, thus pronounces: "As to "Sleep, it is best when conformable to natural Custom, or when "the Patient wakes by Day, and sleeps by Night; but if "there be any Alteration in this respect, it is so much the "worse." And 2 *Aph.* 2. he says, that "when Sleep com- "poses a Delirium, it is a good Sign.

As to *Watching*, of which we will now treat in particular, it is defin'd by *Galen*, "An Extension of the Soul from its "Original to all Parts of the Body, which sometimes happens "to be great and copious, at other times little and inconsider- "able; because the Soul is extended from its Original some- "times for a long time together, and in an abundant manner; "at other times, for a shorter while, and more sparingly." Hence then proceed much and little Watching; But what we treat of at present is, a great and preternatural Extension and Effusion of the Soul from its Original to all Parts of the Body, proceeding from a Dryness of the Brain, occasioned by hot and acrid Juices, or Exhalations; as we are taught by *Galen* in many Places, particularly *Lib.* 3. *de Loc. Affect.* and *Com.* 4. in *Lib. de R. V. I. A.* And *Com.* in *Prognost.* and *Lib.* 4. *de Præsag. ex Pulf. Cap.* 4. and *Lib.* 3. *de Loc. Affect.* and in other Places, he tells us, that Watching is the proper Effect of Dryness, as Sleep is of Humidity; and that, as it is a Property of Heat to produce Deliriousness, so it is of Dryness to be the Cause of Watching: Whence they who have their Brains affected at the same time with an Excess of Heat and Dryness, are at once both wakeful and delirious, as the same Author observes; *Lib.* 4. *de Præsag. ex Pulf. Cap.* 8. And in his *Comment* on 3 *Aph.* 31. he says, that old Persons are wakeful from Dryness.

From the Cauſes of *Watchings*, we ſhall now conſider what may be learnt for prognoſticating their Event; and here, firſt, we ſhall ſpeak of *Watchings*, from which we may draw favourable Prognoſtics: For though all *Watchings* are in themſelves bad, yet there are ſome which have a very good Signification; and ſuch are thoſe which precede good Criſes, and are accompanied with Reſtleſsneſs, Anxiety, Delirium, Convulſions, Pains, and other Symptoms, as *Galen*, *Lib.* 3. *de Criſibus*, obſerves. Theſe *Watchings* are perceivable in the Increaſe or Height of the Diſeaſe, at which time it is uſual for the Patients to be almoſt perpetually waking, to be under great Diſorder, and to have the Fever more and more exaſperated, the nearer they approach to a Criſis, as we are told by *Galen* in 4 *Aph.* 70. And the ſame Author, *Lib.* 3. *de Criſibus*, pronounces *Watching* with Signs of Concoction, in acute Diſeaſes, the Forerunner of a Criſis. Of ſuch Patients we read, 1 *Prorr.* 132—135, 136. where it is ſaid, "They who on a ſudden "[ἐυθὺ, for which ſome read ἔυθεῖα, ſedate, compoſed] appear "very much diſorder'd, are wakeful, and bleed at the Noſe, "are in ſome meaſure relieved on the ſixth Day." And, *Text.* 135. "*They who are affected with an Heavineſs of the Head,* "and a Pain in its fore Part, with perpetual *Watching*, are "ſubject to an Eruption of Blood at the Noſe." And, *Text.* 136. "Perpetual *Watchings*, with ſudden Jactations and In"quietude, ſignify an Hæmorrhage, and eſpecially if there has "been any previous Diſcharge of that Nature." "Again, *Text.* 149. "An Horror, attended with critical Sweats, and return"ing on the next Day, with unaccountable *Watchings*, por"tend, in my Opinion, an Hæmorrhage." Once more, *Coac.* 110. "Sudden Inquietudes with *Watchings*, and black "and hard Stools, are ſometimes Forerunners of an Hæmor"rhage." Theſe then are the *Watchings* from which we may venture to predict the Recovery of the Patient, on the ſame Ground, as from Pains, Convulſions, Deliriums, and Anxieties preceding a Criſis.

All *Watchings*, except thoſe before taken notice of, however cauſed or circumſtantiated, are bad; for *Watching* dries the whole Body; and as *Galen*, 7 *M. M. Cap.* 6. obſerves, is extremely prejudicial to ſuch as labour under a Dryneſs, and induces on them, if it continues long, Convulſions, and a Conſumption. It is no Wonder, therefore, that, in burning Fevers, obſtinate and perpetual *Watchings* bring on mortal Convulſions, ſince in other Caſes they cauſe violent Inflammations, and, in ſome Subjects, Fevers, eſpecially as *Galen*, *Lib.* 1. *de Sanitat. tuenda*, obſerves, in Infants, *Watchings* refrigerates the internal Viſcera, by reſolving their Heat. Agreeably to this, it is aſſerted by *Hippocrates*, 6 *Epid. Sect.* 4. *Aph.* 12. "In *Watching*, "he ſays, the external Parts are evidently hotter, and the in"ternal colder." He there teaches us, alſo, that *Watching* digeſts and reſolves Bodies: Whence it is neceſſary, as *Galen*, *Lib.* 12. *de M. M. Cap.* 8. infers, that by its long Continuance, the Patient muſt be extremely weakened and exhauſted. We may add to this, that *Watching* foments and increaſes the Crudities of the Humours, as we are told by *Galen*, *Com.* 1. *in Lib. de R. V. I. A.*

For the Reaſons aforeſaid, all *Watchings* in acute Diſeaſes, are to be eſteemed bad; but the moſt pernicious are thoſe which are perpetual, and which by inducing all the bad Symptoms before-mentioned, cannot but afford too juſt Grounds for prognoſticating a fatal Event. It is, indeed, cuſtomary for perpetual *Watchings* to bring on Convulſions, and a Delirium; which they effect by two different Ways and Means, one by drying and inflaming the Brain, and the other by an Oppletion of that Part with an hot Humour; ſince all *Watching*, as we obſerved before, indicates either a Vacuity and Exſiccation of the Brain, or a Repletion of it with hot Humours, or an Inflammation of that Part. Convulſions and a Delirium from *Watching*, procured by this latter means, are not indeed abſolutely fatal; for either by a Reſolution and Evacuation of the hot Humour, or a Propulſion of it to ſome other Part, they are ſometimes removed. With relation to this Subject, we read *Coac.* 109. "That in Children under an acute Fever, Coſtiveneſs with "Watching, much Crying and Striving, Alteration of Co"lour, and great Redneſs, indicate Convulſions." But tho' *Watchings* with thoſe Symptoms are not always mortal, they are, however, very much to be dreaded. Wherefore, *Hippocrates*, 7 *Aph.* 18. juſtly pronounces *Watchings*, attended with Convulſions and a Delirium, a bad Sign.

Convulſions and a Delirium, attendant, or conſequent, on perpetual *Watchings*, and not cauſed by a Repletion of the Brain with hot Humours, are abſolutely mortal, in the ſame manner as Convulſions, ſupervening upon burning Fevers, indicate inevitable Deſtruction. Thus it was in the Caſe of the phrenetic Patient, who could not ſleep, and dy'd on the fourth Day, as is obſerved by *Hippocrates*, 3 *Epid. Sect.* 3. *Ægr.* 4.

Watchings, with ſome other attendant Signs, as æruginous Vomitings, and Pain of the Head, portend a furious Delirium and Death; agreeably to what we are told by the Author of 1 *Prorrhet.* 10. "A Pain of the Head, he ſays, attended with "æruginous Vomitings, *Watchings*, and Deafneſs, are ſoon ſuc"ceeded by a Mania;" as it was in the Inſtance of the phrenetic Subject before-mentioned.

We may conclude, that conſtant and perpetual Watchings in acute Diſeaſes are deadly; as they were in the Caſe of the phrenetic Perſon aforeſaid; and of the Wife of *Dromeades*, 1 *Epid. Sect.* 3. *Ægr.* 11. who continued without Sleep from the firſt to the fourth Day, and dy'd on the ſixth. *Hippocrates*, 1 *Epid. Sect.* 2. *Stat.* 3. informs us, that many, under burning Fevers, dy'd after perpetual Watchings: Wence, in *Prognoſt.* he juſtly pronounces it "a very bad Sign, "when the Patient can neither ſleep by Day nor by Night;" for either Pain, and great Anxiety, or a Delirium, are ſignified by it.

Watchings, attended with ſome mortal Sign, are abſolutely fatal. Here we ought attentively to conſider the Evacuations attending this conſtant Want of Sleep; and, if theſe are all bad, as indicating a ſymptomatical, uſeleſs, or depraved Excretion of Nature, they portend certain Death.

Watchings, accompanied with Cold, copious and conſtant Sweating of the Head, are bad. With relation to this, we read *Coac.* 41. that "They who are affected with cold Sweats, "Watchings, and Viciſſitudes of Head and Cold, are in a bad "State."

Of no better Signification are *Watchings*, attended with other Excretions, which give no Relief to the Patient, but are Signs of Crudity; ſuch are a Stillation, or Falling by Drops, of Blood from the Noſe, and virulent Vomitings.

Sometimes *Watchings* are ſucceeded by Evacuations, which, affording no Relief, are eſteemed very bad, prove injurious to to the Sick, and increaſe the Diſeaſe: Such a Conſequence in all Evacuations and Symptoms, under which, the Patient might reaſonably expect to be eaſed, is pernicious, as we are taught by *Galen*, *Com. in Prorrhet.* and other Places, becauſe in acute Diſeaſes, Excretions, or other Circumſtances, which uſe to relieve the Patient, if they anſwer no ſuch Purpoſe, are ſaid to be bad; but if they are ſo far from proving beneficial, that they render the Caſe of the Sick really worſe than it was before, they may ſafely be pronounced fatal.

As pernicious Convulſions, furious Phrenſies, and Tremblings, are frequently the Conſequences of continual *Watchings*, ſo it ſometimes happens, that a mortal *Coma* ſucceeds them: For, as a long Sleep, after much *Watching*, which refreſhes the Sick, is a very good Sign, ſo a long Sleep, which is ſo far from refreſhing, that the Patient rather finds himſelf fatigued and injured by it, muſt be of deadly Signification; agreeably to that of *Hippocrates*, 2 *Aph.* 2. "Sleep which compoſes a Delirium, "is good;" and the preceding Aphoriſm, "A Diſeaſe, in which "Sleep creates Pain and Anxiety, proves mortal:" But where Sleep helps and relieves the Patient. the Diſeaſe is not mortal.

A *Coma* ſucceeding a perpetual *Watching* is generally fatal, as proceeding from a Refrigeration and Reſolution of the natural Heat, which muſt be highly deſtructive, as *Galen*, *Com. in* 4 *Aph.* 67. obſerves; for Coldneſſes, he there ſays, which are conſequent upon hot and dry Affections, are incurable. A *Coma* ſometimes ſucceeds a *Watching*, or Want of Sleep, from a Reſolution of the Bile, and a dry Evaporation, which was the Cauſe of that *Watching*, the pituitous Humour ſtill remaining, which moiſtens and dilutes the Brain; and ſuch a Coma, with Signs of Concoction, and the Strength not much injured, cannot be thought pernicious. *Proſper Alpinus de Præſag. Vit. & Mort. Ægrot.*

Febrile Convulsions.

See Vulnus.

A Convulſion in a Fever, is always excited by ſome Injury done to the Brain, either by Vellications convey'd to it by the Nerves from the inferior Parts, or from an inordinate Appulſe, Tranſflux, or Egreſs, of the Liquid ſecreted in the Brain; which may ariſe from every Cauſe capable of exciting a *Delirium*, *Coma*, or obſtinate *Watching*: And on this Account, there is a great Variety in the Ætiology and Cure.

If it continues long, it eaſily affects the entire nervous Syſtem: Whence fatal Diſorders are excited.

If Convulſions ſucceed the Signs of an Inflammation of the Brain, they are generally fatal Symptoms.

If a Diſcharge of thick Urine is ſucceeded by one of the aqueous and pellucid kind, and Convulſions immediately follow, it is the worſt of Symptoms.

If Convulſions ariſe in Fevers, after profuſe Evacuations, they generally prove fatal; as do thoſe, alſo, which are accompanied by a perpetual *Delirium*.

In order to a Cure, the particular Cauſe is, firſt, to be inveſtigated, and the affected Part muſt be diſcovered, whence the Convulſions primarily aroſe; then Medicines are immediately to be apply'd, which are capable of correcting Acrimony, of reſolving the impacted Matter, and relaxing the

Parts which are contracted. We are, therefore, to attempt the Cure of Convulsions by diluting, relaxing, making Revulsion, and lenifying, never trusting to the specious Character of Antispasmodics.

But if the Head is found to be primarily affected, recourse must be had to the Methods of Cure recommended above, in case of a *Delirium*, and *Coma*. *Boerh. Aph.*

Prognostics from Convulsions.

Convulsions, when alone, or attendant on other Disorders, though always bad, yet sometimes prove Indications for prognosticating a good Event; but oftener portend Death than Recovery; of which fatal Tendency are those excited in Fevers from a Dryness of the Nerves. *Convulsions* suddenly seizing the Patient in the Beginning of the Disease, afford no certain Prognostic. They are much attendant, also, on Fevers, and indicate nothing of themselves but a Multitude of Humours, without any Tokens of a Recovery, unless they are critical. But we shall treat more accurately of the Prognostics of *Convulsions*, after we have first shewn what they are, with their Causes and Differences.

A *Convulsion*, in *Greek* σπασμὸς, *Spasmus*, according to *Galen*, *de Sympt. Caus. Lib.* 2. *Cap.* 2. is an involuntary Tension of the Nerves and Muscles, by which they are reduced to the same Posture and Disposition, as would happen to them from a natural and spontaneous Motion. And in the *Definitiones Medicæ*, ascribed to the same Author, it is said, that a *Convulsion* is an Affection incident to the Nerves and Muscles, by which sometimes the whole Body, sometimes a Part of it, is distended. Hence, this Kind of Disorder is by many properly enough called a *Tension*, and a *Distension*, tho' some make a Distinction between a *Convulsion*, or *Spasm*, and a *Distension*, from that Passage of *Hippocrates*, 4 *Aph.* 57. "A Fever coming upon a *Convulsion*, or "*Distension*, [τέτανος], removes the Disorder." But *Galen*, in Comment, has removed this Difficulty, and very well stated the Case, where he tells us, that of the three different Kinds of *Convulsions*, what the *Greeks* call *Tetanus*, may more properly be called a *Distension*, and not a *Convulsion*, if it were only, because in such a Disorder the Parts appear not convulsed, but are equally distended both Ways; on which account principally it has the Name of *Distension*.

There is, also, a twofold Distinction of *Convulsions*, one permanent, and without conspicuous Motion, of which there are three subordinate Kinds, one called by the *Latins*, *Distentio*, by the *Greeks*, *Tetanos*, and by *Celsus*, particularly *Rigor*, in which Affection, the Neck, together with the rest of the Body, remains immoveable, and inclined to neither Side, but erected in a right Angle to both. And this seems most properly to be what *Hippocrates* calls *Tetanos*, a *Distension*, which differs from a *Convulsion*, in that, as we just said from *Galen*, the Parts appear not to be convulsed.

A second Kind is called Emprosthotonos, [see Tetanus] which is, when the Head, Neck, and rest of the Body are contracted towards the Breast; on which account it is called *Tentio ad anteriora*, "a Tension towards the anterior Parts."

The third has the Name of Opisthotonos, [see Tetanus] from the *Greeks*; and by the *Latins* is expressed by *Tensio ad posteriora*, "A Tension towards the posterior Parts." *Galen*, in his Book of *Medicinal Definitions*, has comprehended these three Kinds of permanent *Convulsions*, in the following Words: "Travellers, says he, who die of Cold on the Roads, "are seized with such Kinds of Rigors as the *Greeks* call "*Emprosthotonos*, *Opisthotonos*, and *Titanos*, because under "such Accidents the Body is inflected sometimes to the ante-"rior, sometimes to the posterior Parts, sometimes neither "Way, but is distended in a strait and immoveable Posture.

The other Kind of *Convulsions* is distinguished by frequent and interrupted Motion; and, therefore, called by Physicians, *convulsive Motions*, or *Convulsions*, *ex Materia non proportionata*, as when they are excited by a Stimulation and Vellication of the nervous Parts, or a violent Straining, and Stretching of the same, as in the Disease which the *Greeks* call *Epilepsia*, or are caused by Consent from a biting Sensation at the Mouth of the Stomach, or from some Injury received first by the Brain. This last Species of *Convulsions* is not *per se*, and in Strictness of Speech, called a *Convulsion*, but rather a *convulsive Motion*: And this is either universal, as when the Brain is primarily affected; or particular, from a Vellication of some particular Muscle or Nerve, in the same manner as a permanent or motionless *Convulsion*, is called *universal*, when, from an Affection of the Brain, it seizes the whole Body; and *particular*, when it affects only one Part; as, for Instance, in the Disorder which some call *Spasmus Cynicus*, in which the Mouth is distorted, or rather the Parts of the Mouth are convulsed.

As to the Parts which may labour under a *Convulsion*, or *Distension*, and the Place affected in *Convulsions*, *Galen*, *de Loc. affect. Lib.* 3. *Cap.* 6. tells us, that all Parts of the Body which are fitted for Motion, may be convulsed; for the Parts of the Body which are moved, are put in Motion by Help of the Nerves and Muscles, which being convulsed, there is a Depravation of that Motion, as it happens in a Grinding of the Teeth, which the *Greeks* call *Trysmos*, and is a *Convulsion* of the Muscles, as we are taught by *Galen*, *de Loc. affect. Lib.* 2. *Cap.* 2. And in the same Treatise, *Lib.* 3. *Cap.* 6. he teaches us from the convulsed Part to know, whether the spinal Marrow, or the Brain, or the Nerves, or which of them, are affected, in the following Words: "When the whole "Body is convulsed, all imagine such a Part to be affected, "as, like the Trunk with respect to the Branches of a Tree, "is the common Trunk of all the Nerves, and not of a few "only in one Part, in nature of a Branch; as is the Case, "when a Leg, or one of the Hands, happens to be convulsed, "where a Convulsion of the whole Member shews the Origi-"nal of the Nerves distributed on it to be affected, from the "Example of a Branch of a Tree. But when the whole Body "is affected, we must suppose the common Origin of all the "Nerves below the Face, which answers in proportion to the "Trunk of a Tree, to be affected, that is, the first Parts of "the spinal Marrow; for which Reason, the most experienced "Physicians adapt their Remedies to those Parts, and take "no Notice of the Heart. But if, with the rest of the "Body, the Face be, also, convulsed, we take care not "only of the Beginning of the spinal Marrow, but of the "Brain itself. And, indeed, we often see the Lips, the Eyes, "the Skin of the Forehead, the whole Jaws, and the Root "of the Tongue, affected with *Convulsions*; and, because "we learn from Anatomy, that all these Parts are moved by "Muscles, which receive their Nerves from the Brain, we "judge that to be affected whenever those Parts are convulsed; "but when we see the other Parts of the Body labouring under "*Convulsions*, while those remain in a due Disposition, we "conclude the Origin or Beginning of the spinal Marrow to be "affected."

Having thus learnt to know the Part originally affected by the Part convulsed, we proceed to inquire into the Causes of *Convulsions*; and, first, of those which are perpetual and permanent without Motion. *Convulsions*, says *Hippocrates*, 6 *Aph.* 39. "are occasioned either by Repletion, or Inanition." The same is confirmed by *Galen*, *Lib.* 2. & 3. *de Loc. Affect.* & *in* 4. & 6. *Lib. Aph.* & *Lib. de Trem. Palpit.* & *Convulsi.* and in innumerable other Places; but especially, *Lib.* 2. *de Symptom. Caus.* where he says, that "a *Convulsion* draws the "Nerves and Muscles into the same Posture and Disposition, "as that into which they were brought by the animal Force, "when in their natural State. Whether, therefore, voluntary "Motions are performed by a Tension of the Muscles at their "Origin, or an Impletion of them by a flatuous Influx, the "Effects are the same in a *Convulsion*, whether from a flatu-"lent Spirit, which may be generated in the Veins, or a Mul-"titude of other Disorders, among which is a Phlegmon, "which may create a Tension." And these are all comprehended, according to *Hippocrates*, under the two general Heads of *Repletion* and *Inanition*, of which the first takes place in a Phlegmon, and the other in burning and dry Fevers. And that immoderate *Impletion* and *Inanition* may either of them cause a Tension in nervous Bodies, we may learn from what happens to the tense Strings of musical Instruments, which break whenever those Instruments be laid in a moist and humid, or a dry and dusty Room; and they are therefore relaxed, before laid aside. This Generation of *Convulsions* is illustrated by *Galen*, *Lib.* 3. *Cap.* 6. in the following Words: "If you "observe nervous Bodies, particularly the Strings of an "Harp, by an immoderate Distemperature of the Air, di-"stended to such a Degree as to break, you will easily "imagine, that the same thing may happen to the Nerves "of Animals." But how are Strings, from an Affection of the Air, as when it is immoderately dry or moist, stretched in such a manner as to break? The Humour, to answer, moistens them so as to raise them into a preternatural Tumor, which must of Necessity cause extraordinary Tenseness; on the other hand, as the Sun by drying Skins contracts them, so Dryness draws and stretches Cords and Strings; and thus we observe Thongs of Leather, when dry'd by the Fire, reduced to a State of Tenseness and Contraction.

To these two Causes of *Convulsions*, *Galen*, in *Aph.* 25. adds a third, which is, the Weakness of the nervous Parts; on which account Children, he says, are much subject to *Convulsions*, as well as from the crude Aliment with which they abound.

The nervous Parts often labour under a Repletion from a crude Humour, by which they are convulsed, as we are told by *Galen*, *de Sympt. Caus. Lib.* 2. *Cap.* 2. Thus it is with Children, who, abounding with crude Aliment, and having their nervous Parts not very strong, are easily affected with Disten-

ſions, as *Hippocrates* tells us, 3 *Aph.* 25. Hence, 2 *Epid. Sect.* 5. he adviſes, when Children * are affected with *Convulſions* to excite a Fever, by which means that Diſorder, together with the Fever; is ſometimes removed in a ſafe Manner.

To this Head of *Repletion* may be reduced Convulſions from an Humidneſs of the Air, as when we are told by *Galen*, in *Epid. Sect.* 2. that in a moiſt and cold Conſtitution of the Air, many Perſons, and eſpecially Children, as *Hippocrates* writes, were afflicted with Convulſions; and, alſo, thoſe proceeding from an immoderate drinking of Wine.

Sometimes, alſo, the nervous Parts are ſtretched and convulſed from their being imbued with Blood, or bilious Excrements, ſometimes from a Flatus, and frequently from a Phlegmon, either immediately, or by Conſent of the neighbouring Parts. After this manner are occaſioned Tenſions of the Hypochondria, which proceed from a violent Inflammation of the Diaphragm, Pleura, or Liver; and to the ſame Head appertain *Convulſions* from Wounds attended with an Inflammation.

The Parts are dry'd, or, to ſpeak in the Phraſe of *Hippocrates*, emptied, or evacuated, as well by a burning Heat, as an immoderate Cold. Of the latter we read, 5 *Aph.* 17. that it "produces Convulſions and *Diſtenſions*;" and, *ibid. Aph.* 20. it is ſaid, that "Cold is biting to Ulcers, hardens the "Skin, renders Pain inſupportable, blackens, and excites fe-"brile Rigors, Convulſions, and Diſtenſions." Here *Galen*, in his Comment, ſays, that "Immoderate Cold excites thoſe "Convulſions and Diſtenſions, with a Refrigeration of the "Nerves; for as it is not convenient, that this Subſtance ſhould "be diſſolved by an immoderate Heat, it is no leſs prejudicial "to them to be refrigerated and contracted." For exceſſive Cold, affecting the Nerves, Muſcles, Tendons, and Ligaments, firſt cauſes an Inequality of the Skin, by repelling the Heat and Moiſture inwards; then dries by expreſſing the finer Parts, compreſſes, condenſes, hardens, and, by cloſing the interior Sinuſes and Bores, prevents Diffiation and Perſpiration, as well as Reception of Aliment, ſo that the Parts remain rigid, hard, and diſtended. To this Purpoſe we read, *Coac.* 23. that "a Rigor, "producing an Opiſthotonos, is mortal;" and *Galen*, in his Book of medicinal Definitions, before quoted, ſays, that "Tra-"vellers oppreſſed with Cold, die of an *Emproſthotonos*, *Opiſtho-*"*tonos*, or *Tetanos*."

Immoderate Heat produces the ſame Effect, and much more efficaciouſly; for by diſſipating all the humid Subſtance of the Muſcles, and other nervous Bodies, it renders thoſe Parts extremely dry'd and parched; whence they are diſtended and convulſed. Burning Fevers, therefore, which, like a Fire, dry the Nerves, produce a Diſtenſion and *Convulſion* of the ſame; and, as *Galen*, on 4 *Aph.* 66. teaches, induce *Convulſions* of a pernicious Kind. After the ſame manner mortal Phrenſies, by diſſolving the Subſtance of the Nerves with their immoderate Heat, uſually end in *Convulſions*. On the ſame account, all conſiderable feveriſh Eſtuations have the like Effect by Drying, as we are aſſured by *Galen*, on 7 *Aph.* 13. and the ſame Conſequence follows from conſtant Watchings, and all great and immoderate Evacuations and Purgations, as we learn from the ſame Author, on 5 *Aph.* 3. 4 & 7. *Aph.* 9. And he calls all thoſe *Drynaſſes*, if I may uſe the Word, the Cauſes of *Convulſions*, *de Loc. Affect. Lib.* 3. *Cap.* 5. comprehending them all in the following Words: "For ſince a *Convulſion* is occa-"ſioned either by Labour, Watching, Hunger, Solicitude, "or a dry and burning Fever, as we ſee in Phrenſies, you may "juſtly impute the Cauſe to a Dryneſs and Inanition."

Thus have we aſſigned the various Cauſes of perpetual and permanent *Convulſions*, and have reduced them under the general Heads of Repletion, and a Dryneſs, Evacuation, or Inanition, of the nervous Parts. But *Convulſions* attended with manifeſt Motion, ſuch as thoſe of the epileptic Kind, and thoſe they call *convulſive Motions*, have other Cauſes. For ſometimes they proceed from a groſs and viſcid Humour obſtructing the Ventricles of the Brain; which is the Cauſe of that univerſal Convulſion which the *Greeks* call *Epilepſia*, and others *Morbus Comitialis*, according to *Galen*, *de Loc. Affect. Lib.* 3. *Cap.* 7. where he tells us, that "the Epilepſy is a Convulſion of all "the Parts of the Body, not perpetual, as is obſerved in the "*Emproſthotonos* and *Tetanos*, but incident at certain Inter-"vals; and this *Convulſion* is occaſioned when the Brain is pri-"marily and in itſelf affected; whence, by Conſent of Parts, "we often obſerve Bodies to labour under *Convulſions* both "general and partial." The ſame Author, *de Loc. Affect. Lib.* 5. *Cap.* 6. has demonſtrated, that a Diſorder of the Mouth of the Stomach has not only occaſioned *Convulſions*, by communicating the Injury to the Brain, the Origin of the Nerves, but other very ſevere Symptoms; and, he tells us of a young Grammarian, who, whenever he was too intent on Teaching or Thinking, or faſted too long, or fell into a Paſſion, was ſeized with a Fit of an Epilepſy, from a bilious and acrid Juice vellicating the Mouth of the Stomach. And, in his Comment on 5 *Aph.* 1. he ſpeaks of a young Man who was frequently affected with an univerſal *Convulſion*, from an æruginous Humour gnawing the Mouth of the Stomach; and recovered not from his Fit, before he had diſcharged the æruginous Matter by Vomit. Again, in his Book of *Veneſection* againſt *Eraſiſtratus*, he tells us, that *Diodorus* the Grammarian was affected with *Convulſions* after long Faſting.

A *Convulſion*, alſo, is occaſioned by much Straining and Retching, when the Stomach labours to expel ſome malignant and noxious Matter, in the ſame manner as a true Epilepſy is induced, while the expulſive Faculty in the Brain makes Efforts to expel the groſs and viſcid Juices which obſtruct its Ventricles, and intercept the Paſſage of the animal Spirits thro' them. *Hippocrates*, therefore, had good Reaſon to ſay, that Convulſions were produced from White Hellebore, by its pernicious Juices gnawing and vellicating the Mouth of the Stomach. An Inſtance of this fell within our own Obſervation, while we practiſed Medicine at *Padua*, in a young Man, who, by the Careleſsneſs of an Apothecary, took White inſtead of Black Hellebore. But many Inſtances may be given of ſuch as have been affected with convulſive Diſorders from ſome bilious, or æruginous Humour, or ſome poiſonous Juice infeſting the Stomach, and vellicating its Mouth.

It appears, therefore, that an Injury done to the Mouth of the Stomach is, by Conſent of Parts, communicated to the Brain; whence Convulſions are excited. And not only the Mouth of the Stomach, but the Uterus, and this laſt, moſt of all, communicate, by Conſent, their Diſorders to the Brain; whence hyſteric Women are often obſerved to be moleſted with *Convulſions*. *Galen*, *de Loc. Affect. Lib.* 6. *Cap.* 5. gives an Inſtance of this in a Widow, who was affected with *Convulſions*, from the Uterus being injured by a Retention of the Semen; and was freed from them by groſs, fetid, ſeminal Excretions. Hence the Author of 1 *Prorrhet. T.* 129. ſays, "that Women "affected with Hyſterics, without a Fever, are ſubject to "Convulſions; as was the Caſe, for Inſtance, of *Dorias*."

And not only from the Uterus, but from other Parts, by a poiſonous and highly pernicious Vapour aſcending to the Brain, may convulſive Diſorders be excited; in Proof of which, *Galen*, *de Loc. Affect. Lib.* 3. *Cap.* 7. gives Inſtances of two Boys affected with an anomalous Epilepſy.

Such, then, we may ſuppoſe, are the Cauſes not only of permanent, but moveable *Convulſions*; but *Galen*, *Lib.* 12. *Meth. Med. Cap. ult.* has comprehended in few Words the Cauſe of all *Convulſions*, and convulſive Motions, where he ſays, they are occaſioned either by a Dryneſs, Repletion, a conſiderable Inflammation, a biting Humour, or violent Cold.

But we have treated, we hope with ſufficient Accuracy, of the *Cauſes* of *Convulſions*; and proceed now to conſider the Signs from which we may predict their future Appearance. And here we read, *Coac.* 85. 157. that Deliriums increaſing ſenſibly in Ferocity become at laſt outrageous, and portend *Convulſions*; and a little after, *T.* 162. "They who are af-"fected with a Pain of the Head, and labour under a Catochus, "with a Conſtipation of the Belly, have a fierce Look, and a "florid Colour in the Face, are ſeized at laſt with an *Opiſtho-*"*tonos*." That *Convulſions* ſhould ſucceed mortal Inflammations of the Brain, is agreeable to Reaſon, ſince they are Signs of a mortal Phrenſy, under which it is proper and uſual for the Patient, as *Galen* ſays in 1 *Prorrhet.* to be convulſed, and to die in *Convulſions*. The Author, alſo, of 1 *Prorrhet. T.* 28. tells us, "That frequent Mutations in Phrenſies indicate *Con-*"*vulſions*." And, *Coac.* 171. we read, "That an acute Pain "in the Head, attended with a Torpor and Heavineſs, are "uſually ſucceeded by Convulſions." And, *ibid. T.* 177. "That "a Pain of the Head, with a ſmall Sweat, and a Conſtipa-"tion of the Belly, end in Convulſions."

Theſe, then, are the prognoſtic Signs of *Convulſions*, of which Signs only violent Pains of the Head, and a furious or outrageous Delirium are to be reckoned as certain, the other Marks not affording any ſure Grounds for Prediction. As for Children, we are told by *Hippocrates*, in the *Prognoſtics* towards the End, that "They become affected with *Convul-*"*ſions*, if they labour under an high Fever, and are coſtive, "wakeful, frightful, much given to Crying, and change their "Colour to pale, livid, or red; and theſe Symptoms are inci-"dent to Children from their Birth to their ſeventh Year."

* The Author of the Notes and Emendations to *Proſper Alpinus*, reads *Puerperas* with *Foeſius*, as rendered from παιδας, and not *Pueros*, with *Alpinus*, becauſe, as he ſays, no ſuch Directions concerning Children are to be found in all the *Epidemics*.

Children more advanced in Years, and full-grown Perſons are not ſo ſubject to *Convulſions* in Fevers, unleſs at ſome very violent and dangerous Criſis, as is uſual under a Phrenſy.

But we have ſaid enough on this Head, and ſhall now take into Conſideration the *Prognoſtics* from Convulſions which offer themſelves to our Examination, in order to the Prediction of Death, or Recovery in acute Diſeaſes. And here, firſt, we ſhall ſpeak a little of thoſe *Convulſions* which are not attended with a Fever. *Convulſions* of this Kind, which proceed from a Repletion of the nervous Parts with a crude Humour, are leſs dangerous than ſuch as are excited by a Dryneſs and Arefaction of the Nerves; and *Convulſions* which owe their Original to a Repletion, are diſtinguiſhed from the others by their Suddenneſs.

Of the three diſtinct Kinds of *Convulſions*, what they call the *Tetanus* is the moſt acute Diſorder, and often kills in three or four Days; the Muſcles of the Jaws and the Gullet being convulſed in ſuch a manner, that Deglutition is entirely deſtroyed, and the Patient rendered incapable of being nouriſhed with Food, or relieved with Medicines: But when the Diſeaſe is protracted to a greater Length, there are good Hopes of Recovery. What we have ſaid is the ſame with that of *Hippocrates*, 5 *Aph.* 6. *Whoever happen to be ſeized with a* Tetanus, *die in four Days; but if they ſurvive that Term, recover.* The Patient, in ſuch a Caſe, always meets with the beſt Relief from a ſupervening Fever; for the febrile Heat conſumes the Humours which obſtruct the nervous Parts. On this Subject we find *Galen* diſcourſing, *in* 2 *Aph.* 26. where he ſays, *If any Perſon in Health happens to be ſuddenly ſeized with* Convulſions, *they muſt of Neceſſity be occaſioned by a Plenitude. Now the Nerves ſuffer a Repletion from cold and viſcid Humours, by which, alſo, they are nouriſhed, ſo that they become convulſed: And this Diſorder is remedied by a ſupervening Fever, which heats the cold, and attenuates and diſcuſſes the viſcous Humours.* This is no more than a Comment on that of *Hippocrates*, 4 *Aph.* 57. before-quoted. Very juſtly, therefore, it is ſaid, 2 *Aph.* 26. that *it is better for a Fever to come upon Convulſions, than Convulſions upon a Fever.* And with good Reaſon does the ſame Author *, 2 *Epid. Sect.* 5. adviſe exciting a Fever in Children for *Convulſions*; by which means, the crude and groſs Humours are heated, attenuated, and diſcuſſed. Hence the more violent the ſupervening Fever, and the more intenſe its attendant Rigor, the more effectually will it remove the *Convulſions*. Thus qualified is a Quartan, which is accompanied not only with an intenſe Degree of Coldneſs, but a moſt efficacious Heat; by virtue of which it gives Relief under a great Diſeaſe, if we may believe *Hippocrates* and Experience, for which we have good Reaſon; for this Kind of Fever is attended with a more effectual Heat than other Fevers; becauſe it has its Foundation in a more groſs and denſe terrene Matter; as may be inferred from what we read 5 *Aph.* 70. where we are told by *Hippocrates*, *that they who are ſeized with a Quartan are not very ſubject to* Convulſions; *and ſuch as are firſt taken with* Convulſions, *are relieved by the coming-on of a Fever.* Such is the good Effect of a Quartan, not only by its Heat, which effectually diſcuſſes the Repletion of the nervous Parts; but by the Intenſeneſs of its Cold, with which it ſhakes the Body ſo long till the Humour is by that Motion digeſted, or expelled from the nervous Parts. A Fever, therefore, coming upon *Convulſions*, is good; becauſe it removes the Repletion by a Diſcuſſion. And this is further illuſtrated and confirmed by *Hippocrates*, in what he ſays of thoſe who are convulſed from Drunkenneſs, 5 *Aph.* 5. where we read, that if *a Perſon who is drunk be taken ſuddenly ſpeechleſs, he dies in Convulſions, unleſs a Fever ſeizes him.*

And theſe are the *Convulſions* from which we may hope a good Event, eſpecially in Children; who, the more ſubject they are to *Convulſions*, both on account of the crude Aliment with which they abound, and the Weakneſs of their nervous Parts, as *Galen*, on 3 *Aph.* 5. has it, the leſs are they in danger from ſuch Diſorders, and the more eaſily are they relieved from them by a ſupervening Fever. Hence *Convulſions* in Children labouring under Fevers, are not ſo much to be dreaded; but in adult Perſons they are uſually pernicious, as they are generally owing to a Dryneſs and Rarefaction of the nervous Parts by the febrile Heat, than which nothing is more pernicious, in the Opinion of *Galen*; who, in his *Meth. Med. Lib.* 12. *Cap.* 8. has theſe Words, with reſpect to a *Convulſion* from Dryneſs: *He muſt know*, he ſays, *that an Affection of this Kind, if ever it be cured, requires Humectation. But it is extremely difficult to be cured, or rather incurable, if it be contracted by a Fever, and ſucceeds a Phrenſy of the moſt mortal Kind. For my part, I never knew, nor heard of any one cured, who was convulſed in this manner.* In Children, indeed, affected with feverith Diſorders, *Convulſions* are not ſo bad, or ſo much to be dreaded, as we ſhall by-and-by demonſtrate more plainly, from 1 *Epid. Sect.* 2. but in all other Ages, *Convulſions* proceeding from Dryneſs are pernicious. For this Reaſon, *Convulſions* attending Fevers are to be dreaded. Whence *Hippocrates* might very juſtly ſay, that it is better for Fevers to ſucceed *Convulſions*, than for thoſe to come upon Fevers; for if they are the Conſequence of Purgation, or any other conſiderable Evacuation, they are of the worſt Sort, becauſe all Evacuations dry the Body. In Confirmation of this Doctrine, we are told, by the Author of 1 *Prorrhet. T.* 145. *that a violent and copious Hæmorrhage from the Noſe ſometimes induces Convulſions*; and, by *Hippocrates*, 5 *Aph.* 3. *that Convulſions or Hickups ſucceeding a copious Diſcharge of Blood by the Anus, are bad:* And *ibid.* 56. *that Convulſions and a Lipothymy after a Flux of the Menſes, are bad.* Again, 7 *Aph.* 9. we read, *that a Delirium or Convulſions ſucceeding an Hæmorrhage, are bad.* The ſame Poſition is more generally and expreſly aſſerted by *Galen*, in his Comment on *Lib.* 6. *Aph.* where he ſays, that *Convulſions* from an Evacuation are moſt acute and pernicious. To the ſame Purpoſe we read, 7 *Aph.* 13. *that* Convulſions, *or a Tetanus, after violent burning Heats, are bad*; and, *ibid. Aph.* 18. *Convulſions and a Delirium after Watchings, are bad.* The Reaſon is, becauſe violent Heats, or burning Fevers, and immoderate Watchings, reſolve and evacuate the humid Parts. In the ſame manner, that is, by drying the Body, do immoderate Purgations produce pernicious *Convulſions*, according to 5 *Aph.* 4. where it is aſſerted, *that* Convulſions *or Hickups, ſucceeding an Hypercatharſis, (or profuſe Purgation) are bad.* Moreover, we read, 7 *Aph.* 25. *that Convulſions from a purging Draught are mortal.* And 5 *Aph.* 1. *that* Convulſions *from (white) Hellebore are deadly.*

Having ſpoken hitherto of the Prognoſtics from what they call *permanent*, or *perpetual Convulſions*; we proceed to treat, in a few Words, of ſuch *Convulſions* as are occaſioned by a Straining, or Stimulation, while Nature attempts an Excuſſion of the groſs and viſcid Humours which obſtruct the Ventricles of the Brain, as in a Fit of the Epilepſy. *Galen, in Lib.* 5 *Aph.* ſays, that an Epilepſy is not a very acute nor dangerous Diſeaſe; and juſtly, becauſe it belongs to the Liſts of chronic Diſeaſes; and the Patients are often perfectly freed from it, eſpecially Children; according to that Aphoriſm of *Hippocrates*, 2 *Aph.* 45. *Very young Perſons ſubject to an Epilepſy, are cured chiefly by Change in Age, Place, and Way of Living.* And 5 *Aph.* 7. we are told who are capable, and who are incapable of a Cure; where it is ſaid, "An Epilepſy before the Age of "Puberty, admits of a Metaſtaſis (a Solution, ſee META-"STASIS); but if it moleſts the Patient after twenty-five, it "generally accompanies him to his Grave." And *Galen*, in his Treatiſe *de Puero Epileptico*, tells us, that he had cured ſeveral Children; and in his Book *de Purg. Med. Fac.* that in ſeveral others, who were not cured, he had prevented a Return of the Diſorder, by the proper Precautions of Purging and Phlebotomy in the Spring.

As for other Kinds of *Convulſions*, which are excited from Conſent of Parts, by ſome acrid Humour, or Poiſon, or from ſome poiſonous and malignant Vapour, they are all curable. Of this Nature were the *Convulſions* under which the Grammarian before-mention'd labour'd, from bitter Bile; and the young Man, alſo, ſpoken of, who was moleſted with an æruginous Matter, gnawing and vellicating the Mouth of the Stomach, and was freed from the ſame by Vomiting. Examples may, alſo, be given, of *Convulſions* from malignant Vapours, remov'd, and perfectly cur'd; but we have, perhaps, ſaid enough, as to the Prognoſtics from *Convulſions* excited without a Fever; and ſhall, therefore, proceed to ſpeak of ſuch as happen under acute Fevers.

Of the Signification of CONVULSIONS *in acute Fevers.*

All *Convulſions* which happen in the Beginning of Diſeaſes, indicate a Multitude of Humours, by the nervous Parts labouring under a Repletion, which occaſions a Tenſion, or *Convulſion*. This Kind of *Convulſion* affords no ſure Grounds for Prognoſtication, but indicates, however, that the Diſeaſe is very ſevere, and not void of Danger; ſince all Diſorders, proceeding from a Multitude of crude Humours, are violent, and dangerous. Inſtances of this are many, in the Books of the *Epidemics*, of thoſe who were reſtored to Health; particularly, the Woman who was three Months gone with Child, and lay ill in the *Strand*; *Pythion*, who liv'd near the Temple of *Tellus*; the Man who lay ill in the Garden of *Dealces*; *Chærion* at *Demæretus*; and the moroſe Woman, who was ſeized with *Convulſions*, as it were, on a ſudden, on the firſt Day. In all theſe Caſes, except his who lodged in the Garden of *Dealces*, where a Criſis was indicated, *Convulſions* were Signs of a Multitude

* The Paſſage here meant runs thus: ἢν λέχοις σπασμὸς ἐπιγένηται, τῷδε τρόπῳ. Where our Author, for λέχοις, reads παισίοις; and tranſlates τῷ τρόπῳ literally, *Ignem exercemus ſeu inuramus*; but we have followed *Foeſius*. See the preceding Note.

of

of Humours, and had nothing in them of Certainty, with reſpect to Prediction. In *Chærion* and *Pythion*, indeed, they were not ſo much to be dreaded, becauſe on the ninth Day attended with a Diſcharge of Urine, in which appeared ſome Signs of Concoction; but in the Caſe excepted they were critical: For, as *Galen* ſays, in his Comment, "the Delirium on "the ninth Day, and ſquinting of the Right Eye, were uſual "Incidents in a Criſis."

Convulſions, alſo, in Fevers which proceed from the Brain, affected by Conſent of Parts from a Diſorder in the Mouth of the Stomach, are not to be feared, ſince they may be remov'd by a Vomit. An Inſtance to this Purpoſe we find recorded by *Hippocrates*, 5 *Epid. T.* 40. in "the Son of *Hermophilus*, who "was ill eleven Days. His Diſorder was a Fever, and he "took no Suſtenance: On the firſt Day he was delirious, but "recovered his Senſes at Night. The next Day he lay ſpeechleſs, under a Stertor, with his Eyes diſtorted, and was feveriſh; but by Intromiſſion of a Feather he vomited black "Bile; and, by means of a Clyſter, had a plentiful Diſcharge "of ſtercoraceous Matters by Stool."

Convulſions, in ſuch Caſes, proceeding from the Uterus, are, alſo, eaſy to be cured; according to that in 1 *Prorrhet.* 119. "*Convulſions* in hyſteric Women are eaſily removed; as in "the Caſe of *Dorcas*." [See a more juſt Tranſlation of this Paſſage before.]

Convulſions, alſo, in Children affected with feveriſh Diſorders, as they are no Indications of any great Alteration from a healthy State, becauſe Children abound much with crude Aliment, and have, beſides, weak Nerves, are not much to be dreaded. "Children, ſays *Galen*, *Com. in* 1 *Epid.* becauſe of "the Weakneſs of their Nerves, are very ſubject to *Convul-* "*ſions*." And the more eaſily they are liable to be convulſed on ſlight Occaſions, the leſs is the Danger. It is no wonder, therefore, if Diſorders of this Kind are not ſo formidable in Children, even under Fevers, as in adult Perſons. To this Purpoſe is the Obſervation of *Hippocrates*, 1 *Epid. Sect.* 2. "that many were at firſt ſeized with *Convulſions*, and a Fever, "eſpecially Children; the Fever was, alſo, ſucceeded by *Con-* "*vulſions*. Theſe Symptoms were generally of long Continuance, and had no ill Conſequence, except in thoſe where "all other Signs were pernicious." And the ſame is confirm'd by the Author of the *Coac. T.* 356. where he ſays, that "*Con-* "*vulſions* ſucceeding a Fever are mortal, but leaſt of all ſo to "Children." But if to *Convulſions* there ſucceeds a Fever, or, if there be a Fever already, an Exacerbation of the ſame, it is a good Sign, with reſpect to the *Convulſions*, provided they proceed from a Repletion of the nervous Parts. Hence we are told, *Coac.* 358. "that an acute Fever, coming upon *Convul-* "*ſions*, removes the Diſorder; whether it is a new Fever, or an "Exacerbation of the old." The ſame Symptom is much alleviated by a Diſcharge of much vitreous Urine, or what reſembles Semen.

Convulſions in the Beginning of Fevers, if the Fever increaſes, uſually cauſe an Alleviation of the Rigor. Thus it was in the Caſe of *Philiſtides*, the Wife of *Heraclides*, 7 *Epid. T.* 130. "who, it is ſaid, was ſeized with a high Fever, and a Red- "neſs of the Face, without manifeſt Cauſe; ſoon after, on "the ſame Day, ſhe was affected with a Rigor, and recovered "no Heat; then was convulſed in her Fingers and Toes; "and, ſhortly after, her Heat was revived. On the ſecond "Day ſhe had a new Fit of a Rigor, but recovered a little "more Heat than before; her Redneſs was leſs, and the ſu- "pervening *Convulſions* were more moderate."

We may add, that ſome Sorts of *Convulſions* in Fevers much alleviate, and even remove the Diſeaſe; and theſe ought to be called *critical*, being occaſioned by a Tranſlation of the morbific Matter from the Veins to the Nerves and Muſcles; and if they effect a Solution the firſt Days, they are critical and ſalutary, according to *Coac.* 157. where we read, "that a Convulſion "excited in a Fever removes it the firſt, ſecond, or third "Day; but if it tranſgreſſes the Time in which it firſt began, "and ceaſes not, it is a bad Sign." *Convulſions* of this Nature are occaſioned, as we ſaid, by a Metaſtaſis of the morbific Matter from the Veins to the nervous Parts; which Metaſtaſis, or Tranſlation, may poſſibly diminiſh, or even quite remove the Fever, the Humours being excreted from the Veins, and no longer left to putrefy in them.

And thus far have we ſpoken of thoſe Kinds of *Convulſions*, which, though not properly good, for all *Convulſions* in themſelves are bad, yet ſometimes happen to be ſalutary Prognoſtics. We come now to treat of thoſe which are univerſally bad and pernicious, and of deſtructive or fatal Signification.

It is an Obſervation of *Hippocrates*, *Lib. Prognoſt.* that in acute Diſeaſes a *Convulſion* of the Teſtes and Pudenda is ſucceeded by a violent Pain, or Death; and *Convulſions* in acute Fevers are always of bad Signification to adult Perſons, but worſt of all in burning Fevers, as we are aſſur'd by *Galen*, *in* 4 *Aph.* 66. becauſe theſe dry the Nerves like a Fire, and excite pernicious *Convulſions*. We have obſerv'd, that *Convulſions* from a Dryneſs of the nervous Parts are not only difficult, but impoſſible to be cur'd; for which Reaſon, they muſt be always pernicious in acute Fevers, as being occaſion'd by a Dryneſs of the Nerves, from a Conſumption of the humid by the igneous Heat of the Fever. Thus *Galen*, *in* 4 *Aph.* 35. tells us, "that "in burning Fevers, if the whole Body be dry'd, and a *Con-* "*vulſion* of the Nerves happens to proceed from that Dryneſs, "it is a very great Diſorder, and almoſt incurable, becauſe a "long time is requir'd for removing the Dryneſs of the Nerves; "whereas the Violence of the Diſeaſe will not allow Time to "Nature, but ſpeedily exhauſts the Strength, and deſtroys the "Patient." *Hippocrates*, therefore, had good Reaſon to ſay, that "Convulſions and violent Pains about the Viſcera, in "acute Fevers, are bad;" but if attended with a Decay of the Strength, they ſhew Death to be very near. *Hippocrates*, 4 *Aph.* 49. is very expreſs and elegant to this Purpoſe, when he ſays, "In a not intermittent Fever, if the Lip, or Eyebrow, "or Eye, or Noſe, be diſtorted, or the Patient cannot ſee, or "hear, the Body being at the ſame time very weak; which "ever of theſe Symptoms appears, Death is at hand." Thus it happened, for Inſtance, to the Wife of *Dromeades*, 1 *Epid. Sect.* 3. *Ægr.* 11. who died ſuddenly in *Convulſions* which began at the Head.

Convulſions in a Delirium are very dubious, but in Phrenſies are the moſt pernicious of all Symptoms, and indicate the ſpeedy Approach of Death. *Galen*, as before obſerv'd, *M. M. Lib.* 12. *Cap. ult.* ſays, he never knew or heard of any Perſon who recover'd in ſuch Circumſtances. *Hippocrates*, in his Deſcription of the Epidemic Conſtitution, 1 *Epid. Sect.* 2. ſays, that *thoſe who were affected with Phrenſies, were convulſed, and moleſted with virulent Vomitings; and ſome of them died ſuddenly.* And this he had an Opportunity of obſerving more exactly, in the Caſe of the phrenetic Patient, 3 *Epid. Sect.* 3. *Ægr.* 4. *who on the ſecond Day, in the Morning, loſt his Voice, had a high Fever, ſweated, without Intermiſſion of the Fever, was affected with Palpitations in all Parts of his Body, and at Night with* Convulſions. *On the third Day all the Symptoms were exaſperated; and on the fourth he dy'd.*

We have before demonſtrated, from *Hippocrates* and *Galen*, that it is a Property of mortal Phrenſies to end in *Convulſions*: For it is the Nature of a true Phrenſy to excite *Convulſions* a little before Death, the Nerves being dry'd by an Inflammation of the Brain: We have an Inſtance to this Purpoſe in the Maid-ſervant of *Conon*, 7 *Epid. T.* 98. who dy'd at the End of forty Days, and was ſpeechleſs and convuls'd for ſome Days before her Deceaſe.

Tremors ending in *Convulſions*, or *Convulſions* from Tremors, are affirm'd by *Galen*, on the *Prorrhetics*, to be mortal.

Convulſions occaſion'd by Pains, or obſtinate Watching, in acute Fevers, are pernicious, 7 *Aph.* 18. and ſo are thoſe which proceed from profuſe Purgation, or immoderate Evacuations of any Kind, 5 *Aph.* 3, 4. 56. before quoted. The Reaſon is, becauſe all immoderate Evacuations dry the whole Body, and occaſion a *Convulſion* from a Dryneſs of the Nerves, which is of the worſt Sort, as we have obſerv'd. Hence *Galen*, *Com. in* 7 *Aph.* ſays, that "a *Convulſion* from an Evacuation is moſt "acute and pernicious."

A *Convulſion* proceeding from an Inflammation of the *Ileum* is pernicious, 7 *Aph.* 10.

Convulſions from Wounds are, for the moſt part, mortal. Death is not the neceſſary Conſequence of all *Convulſions* occaſion'd by Wounds, as *Galen* obſerves, *Com. in* 5 *Aph.* though *Hippocrates*, 5 *Aph.* 2. pronounces them mortal. They are, however, for the moſt part, deadly; and we have many Inſtances of it in the *Epidemics*, particularly in *Scamander*, who was convulſed after a Section; another from a Wound with a Dart; the fair Daughter of *Nireus* from a Blow; a certain Pilot from a Fracture of the Finger; another from a Luxation of the Finger; who all died of *Convulſions*. Of *Scamander*, 5 *Epid.* 15. it is ſaid, that "his Hip was ſphacelated, and the "Bone had for a long time been diſlocated. The Operation "of the great Section was performed upon him, and he was "cut home to the Bone, and the Wound afterwards cauterized. "The twelfth Day after the Section he began to be taken with "*Convulſions*, which held him pretty ſtrongly; he was con- "vulſed from the Leg, on the infirm Side, up to the Ribs; and "the *Convulſion* was communicated to the other Side; the "Leg was contracted and extended; the other Limbs were "moved, and his Jaws ſet. The Patient died in *Convulſions* "on the eighth Day after he was firſt ſeized with them." In the ſecond Inſtance, *ibid. T.* 47. it is ſaid, "that a certain "Perſon received a Wound with a ſharp-pointed Dart, a little "below the Neck behind, which appeared ſcarce worthy No- "tice; for it was not deep. But, not long after the Dart "was taken out, the Patient felt himſelf diſtended, and drawn

" backwards, like one ſeized with an *Opiſthotonos*; his Jaws " were under a Conſtriction, and if he received any Liquid " into his Mouth, and tried to ſwallow it, the ſame was diſ- " charged again at his Noſtrils, and he immediately grew worſe " and worſe in all other reſpects, and died on the ſecond Day." The tragical Story of the beautiful Virgin-daughter of *Nireus* is thus related: " This young Woman being about twenty " Years of Age, in playing and ſporting with one of her " female Friends and Companions, received a Blow from her " with the Flat of the Hand, on the fore Part of the Head: " She was immediately taken with a Dimneſs of Sight, and her " Breath failed her; and when ſhe came home ſhe was imme- " diately ſeized with a high Fever, attended with a Pain of " the Head, and a Redneſs about the Face. On the ſeventh " Day ſhe had a Diſcharge of above a Cyathus of fetid, red- " iſh Pus by her Right Ear, and ſhe ſeemed to be better, and " eaſier; but the Fever increaſed again upon her, with a Cata- " phora; ſhe loſt her Voice; the Right Side of her Face was " contracted; ſhe fetch'd her Breath with Difficulty; labour'd " under Convulſions and Tremblings, with an Impediment of " the Tongue, and a Stupor of the Eye; and died on the " ninth Day." Again, *ibid. T.* 74. we have a pretty remark- able Caſe of a " Pilot belonging to a great Ship, who cruſhed " the fore Finger of his Right Hand, and the Bone below it, " with an Anchor: The Conſequence was, an Inflammation, " Sphacelus, and a Fever; he had a gentle Purge adminiſter'd, " and his Heats and Pains were mild and favourable. Some " Part of his Finger was ſeparated, and after ſeven Days a " laudable Ichor was diſcharged from the Wound. Some time " after he complained of an Impediment in his Tongue, " whence an Opiſthotonos was predicted, and a Tendency to " that Diſorder further appeared firſt from a Conſtriction of " the Jaws, and afterwards by an Affixion of the ſame to the " Neck. On the third Day he was wholly convulſed, and " under a perfect Opiſthotonos, attended with a Sweat; and " on the ſixth Day from the Prediction he died." Much of the ſame Nature was the Caſe of *Teiephanes*, the Son of *Har- palus* by his freed Woman, related *ibid. T.* 75. " This young " Man had his Thumb luxated towards the lower Parts, the " Conſequence of which was, an Inflammation, and Pain. " When the Luxation was reduced, he went into the Field, " and at his Return had a Pain in his Loins; he bathed, and " towards Night had a Conſtriction of the Jaws, and was " ſeized with an Opiſthotonos. A ſpumous Saliva made its " way through his Teeth, with much Difficulty; and on the " third Day he died." In the ſame manner one *Tychon*, *ibid. T.* 94. who received a Wound in his Breaſt by a Dart from an Engine, at the Siege of *Datos*, died ſuddenly, on the third Day, in *Convulſions*. From theſe Caſes it appears, that *Convulſions* from Wounds are generally mortal.

Convulſions of the permanent Kind from draſtic, or very ſtrong Cathartics, or poiſonous Medicines, are fatal. Thus *Convulſions* from Hellebore taken inwardly, are by *Hippocrates* pronounced mortal, 5 *Aph.* 1. and, in general, *Convulſions* from any violent Cathartic are by the ſame Au- thor judged fatal, 7 *Aph.* 25. And he gives an Inſtance of the ſame, 5 *Epid. T.* 53. " in a young Woman about twenty, " who took a Medicine to procure Abortion; after which ſhe " was taken with a Pain, and vomited much bilious, pale, and " porraceous Matter; and when ſhe drank was convulſed, and " bit her Tongue. On the fourth Day I (*Hippocrates*) at- " tended her, and obſerved her Tongue to be much ſwelled, " [μεγάλη] and black, and the White of her Eye to be red: " The ſame Day, towards Night, ſhe died." In the ſame Book, *T.* 85. he gives us a Relation of a young Man who died in *Convulſions*, from ſwallowing a Serpent [See the Story under the Article ARGES]. And 7 *Epid. T.* 20. we have an Ac- count of a Woman labouring under a Quinſey, who was con- vulſed on the fourth Day, and died on the fifth or ſixth.

Theſe, then, are the mortal *Convulſions* obſerved in acute Diſeaſes; and the moſt pernicious of them all, as we have ob- ſerved, are thoſe which happen in acute and burning Fevers, eſpecially when conſequent upon a Phrenſy; and that *Convul- ſions* from Wounds are very much to be dreaded, we have proved, from Caſes related out of *Hippocrates*. It remains to give ſome Marks or Signs by which we may know whether thoſe Kinds of *Convulſions*, which in the Beginning of acute Diſeaſes are neceſſarily owing to a Repletion of the nervous Parts, or at any other time of the ſame acute Diſeaſes, are by the ſame Cauſe in any manner whatſoever excited, are ſalutary or pernicious. For our Satisfaction in this Point, we are taught to form a Judgment of ſuch *Convulſions* from the Signs which precede, accompany, or follow them: And here we ought to have a principal Regard to the Signs of Concoction, and Cru- dity: For when *Convulſions* appear under an abſolutely crude State of the Diſeaſe, they always threaten a bad Event. And, indeed, thoſe Kinds of *Convulſions*, when pernicious, never uſe to appear alone, but attended with other pernicious Signs. Thus it was in the Caſes of the Wife of *Philinus*, the Wife of *Dromeades*, *Philiſtes*, the phrenetic Perſon, and the Woman of *Cyzicus*, related in the firſt and third Books of the *Epidemics*; to all which Perſons theſe *Convulſions* proved fatal. In the Wife of *Philinus*, 1 *Epid. Sect.* 3. *Ægr.* 4. theſe *Convulſions* appear'd on the eighth Day in great abundance, attended with Pain, and a high Delirium. The *Convulſions* continued upon her the ninth Day; on the eleventh Day, after being convulſed, ſhe voided great Plenty of white, thick, turbid Urine, which depoſited no Sediment; and theſe concomitant and ſubſequent Signs were, no doubt, to be eſteemed mortal. Much of the ſame Nature was the Caſe of the Wife of *Dromeades*, 1 *Epid. Sect.* 3. *Ægr.* 11. for " on the ſixth Day, in the Morning, ſhe was ſeized " with a new Rigor, but ſoon recovered Heat; ſweat in all " Parts of her Body; was cold in her extreme Parts, and de- " lirious; her Reſpiration was great (full), and at long Inter- " vals [ἀραιόν· See ARÆAS]; and ſoon after ſhe died ſuddenly " in *Convulſions*, which began at the Head." The Signs pre- ceding, it muſt be obſerved, are related, among others, to be an Evacuation of thin, oleous Urine, and a ſmall Diſtillation of Blood from the Noſe; which, with the others before-mention'd, portended nothing but Death. The ſame Judgment was to be form'd from a Tenſion of the Hypochondria in *Philiſtes*, 3 *Epid. Sect.* 2. *Ægr.* 4. who died on the fifth Day; for his *Convulſions* were preceded by an Inflammation of the Dia- phragm, with other very bad Signs. In the phrenetic Patient, 3 *Epid. Sect.* 3. *Ægr.* 4. beſides what we have before proved out of *Galen*, that all *Convulſions* are deſtructive, his *Convul- ſions* were, moreover, attended with other mortal Signs; ſuch as, on the firſt Day, virulent Vomitings, a Fever with a Hor- ror; a copious, conſtant, and univerſal Sweat; and a high De- lirium: On the ſecond Day a Loſs of Voice; a high Fever; Sweating, without any Remiſſion of the Fever; and Palpitations in all Parts of the Body: Theſe, among others, were the per- nicious Signs which preceded thoſe fatal *Convulſions*, which ſeiz'd him the ſame Night, and were ſure Prognoſtics of his Death, which happened on the fourth Day. Thus, alſo, the Woman of *Cyzicus*, who was taken with *Convulſions* on the fourteenth Day, had them accompanied with a Coldneſs of the extreme Parts, and a Delirium, which never went off, in an abſolutely crude State of the Diſeaſe.

Thus much we think proper to be ſaid of *Convulſions*, with reſpect to their Prognoſtics; and under them ſome may, per- haps, think, that we ſhould have comprehended the *Singultus*, or *Hiccough*, which is a Species of *Convulſions*: But ſince the *Hiccough* is a very particular *Convulſion*, affecting only the Stomach, we have choſen to treat of it apart, under its proper Article; and the rather, becauſe *Hippocrates* has written of the ſame as diſtinct from *Convulſions*. *Proſper Alpinus de Præſag. Vit. & Mort.*

FEBRILE SWEATS.

A Sweat in the Beginning of an acute Fever, whoſe Cauſe is ſomewhat obſtinate, ariſes from a lax Debility of the extreme Veſſels, a vehement Circulation of the Blood, and a ready Separation of the aqueous Particles from the other Principles of the Blood.

If it perſeveres, it deprives the Blood of its diluting Fluid, inſpiſſates the Remainder, and cauſes fatal Obſtructions, it being afterwards almoſt impoſſible to dilute, or reſolve the Blood: Hence almoſt every kind of acute Diſeaſe may be produced.

Theſe Sweats are, therefore, always to be reſtrained in the Beginning, unleſs it is certain that the Matter, which ex- cites the Diſeaſe, is ſufficiently thin to be carried off, together with the firſt Sweats.

Sweat is check'd by riſing out of Bed, and ſitting up; by avoiding too many Integuments; by admitting the cool Air; by abſtaining from warm and heating Medicines; by uſing copious Draughts of mild, ſoft, and cool Liquors; that the Loſs of what is diſſipated may be quickly repair'd; and by checking the Violence of the Circulation.

PROGNOSTICS IN ACUTE DISTEMPERS FROM SWEAT.

As the Criſis of acute Diſeaſes often turns upon *Sweats*, the Prognoſtics which may be formed from them, with reſpect to the Fate of the Patient, deſerve to be carefully conſidered. For this End, therefore, we ſhall firſt explain the Nature of *Sweat*, with its Differences; and, alſo, its Cauſes; that we may underſtand how it is generated.

We ſay, then, a Perſon *ſweats*, when he excretes through the Pores of the Skin a Humour which is actually moiſt; to diſtinguiſh it from Perſpirations, or Exhalations, which paſs through the ſame Pores, and are called, by Phyſicians, Inſen- ſible Evacuations; becauſe they are imperceptible to the Senſes. Whence it follows, that *Sweat* is a particular Sort of ſenſible Evacuation made through the Pores or Paſſages of the Skin.

As

As to the Differences of *Sweats*, they are of ſeveral Kinds: Some are taken from their *Subſtance*; in which reſpect they are ſometimes thick and viſcid, ſometimes thin, and without any Viſcidity: They differ, alſo, in *Figure*; for ſome, as we are aſſured by *Hippocrates*, *Lib. Prognoſt.* appear like Millet; others are in the Form of Drops. There is a Diſtinction obſerv'd in their *Colour*; for ſome are yellow, others green; and, beſides, they muſt of Neceſſity aſſume the Colour of the Humour from which they are excreted through the Skin. There is ſome Difference, alſo, to be made in their Taſte, though they are all, as *Galen* ſays, *Lib.* 10. *Simpl. Cap. de Sudore*, more or leſs ſalt and bitteriſh, as are the Humours whence they are evacuated. They differ in Smell, ſince ſome are fetid, others not; in Quantity, ſome are copiouſly effuſed, others are ſparingly excreted, or vaniſh immediately after their Appearance. Again, as to their active Qualities, they are either hot, or cold, or of a middle Temperament; and they have their Differences, alſo, with reſpect to the Times in which they appear; for ſome are obſerved in the Beginning of a Diſeaſe, ſome at its Height, and others at its Decline: And with regard to the Times of their Duration, ſome are continual, others are obſerved at Intervals; ſome *Sweats*, again, appear with Signs of Concoction; others with Signs of Crudity: Some are critical, and determine the Fate of the Patient; others ſymptomatical, as appearing only after the manner of Symptoms: And ſome are periodical; as thoſe which are obſerved in Tertian and Quartan Fevers. And theſe are all the Differences of *Sweats* which we ſhall obſerve at preſent.

In treating of the Generation of *Sweats*, we are to conſider the Matter of which they conſiſt, and the efficient Cauſe of them. The Matter of *Sweat* and *Urine* is the ſame, as *Galen* ſays, *Lib.* 10. *Simpl. Cap. de Sudor.* and in ſound Perſons is the Liquid they receive by the Mouth, only more elaborate, as having paſſed through all the Ducts, from the internal Parts to the Skin. Hence it appears to be the thinner Part of the Aliment, which they call the ſerous Humour, or Ichor, but what has acquired ſomewhat of a bilious Subſtance; and by its Thinneſs is capable of being eliminated from the Body through the Pores of the Skin; as a thick Humour, by a like Reaſon, ſeems indiſpoſed for the Generation of *Sweat*. Such, then, is the Matter of *Sweat* in healthy Perſons; and hence it follows, that they who eat and drink plentifully, ſweat copiouſly; as do, alſo, plethoric Bodies, which have wide Pores, and ſuch as have a moiſt Liver and Spleen. Hence it is ſaid, by *Hippocrates*, 4 *Aph.* 41. *that copious nocturnal* Sweats, *without manifeſt Cauſe, indicate the Body to be too plentifully fed; if this be not the Caſe, you may be aſſured that the Body requires Evacuation.* The Matter of *Sweat*, then, in healthy Perſons, is either the thinner Part of the humid Aliment, as was ſaid before; or a redundant Humour in the Body. In Valetudinarians, or ſick Perſons, it ſometimes conſiſts of Seroſities generated from too humid an Aliment, as may be obſerved in thoſe who have tranſgreſſed the Laws of Temperance; but moſt frequently from a Redundance of too thin Humours, as Blood, yellow Bile, and, alſo, from a cold pituitous Humour. Hence it is ſaid by *Galen*, *Lib.* 3. *de Criſibus*, *Cap.* 3. that *Sweats* are proper to all Fevers, eſpecially to burning Fevers; and that Semitertians, Quotidians, and Quartans, form their Criſes by them; that they are a conſiderable Relief under exceſſive Heats, Inflammations, Parotides, Lethargies, and all other Cephalic Affections; and that all Humours, whether cold or hot, with a proper Degree of Thinneſs, may excite a *Sweat*, or diſcharge themſelves in *Sweat*; but, moſt of all, putrid Humours find a Vent this way, as being the thinneſt, and moſt fluid. Sometimes it happens, though only in malignant and dangerous Diſorders, that the alimental Humidities of the ſolid Parts, which Phyſicians call the natural Humid, by which the natural Heat is maintained, being colliquated and diſcuſſed, paſs through the Pores of the Skin in the Form of *Sweat*.

The efficient Cauſe of *Sweat* is Heat, either natural or preternatural, exiſting in the Body; for it is Heat which attenuates the Humour, and conveys it to the Skin: For Bodies, when they are heated, fall into a *Sweat*. Hence it is that in continual Fevers, under that extraordinary Degree of Heat which ſucceeds a Rigor, there is uſually an Eruption of *Sweat*: For while the Body is under a Rigor, the Heat retires to the inward Parts; but afterwards, if it be ſtrong enough, breaks forth, and, diffuſing itſelf through the Body, extenuates the Humours; and, being reſolved almoſt into Vapours, conveys them, with itſelf, to the Skin, and there cauſes a *Sweat*. *Hippocrates*, in his Book of *Prognoſtics*, ſays, *Some* Sweats *are occaſioned by a Faintneſs or Feebleneſs of the Body; others by the Violence of an Inflammation.* From the firſt Cauſe is produced not ſimply a *Sweat*, but a ſmall Deſudation, or rather a kind of dewy Moiſture, which the *Greeks* call ἐφίδρωσις (*Ephidroſis*; ſee that Word) and the *Latins Deſudatio*, over all the Body, as we are taught by *Galen* on the *Prorrhetica*; or only on the Head and Thorax, and indicates the Imbecillity of the retentive Faculty, or the Redundance of Humours in the ſweating Parts. Deſudations (in the Senſe before implied) are occaſioned by the Violence of an Inflammation oppreſſing or reſolving Nature; or becauſe the thinner Part of the Humidities which are rareſied by the burning Heat, ſettles on the Skin: Wherefore *Sweat* is generated by Heat, changing into Vapour the thin Humour which is the Serum or Ichor of the Blood, proceeding from the Humidities of the Meat and Drink, or rarefying the Blood, Bile, or Phlegm, and raiſing them into Vapours. In Fevers, which the *Greeks* call *Elodes*, and we *Sweating Fevers*, *Sweat* is a proper Symptom; for in this Caſe the ſuppreſſed Humour is, by the Violence of the Heat kindled in the inward Parts, reſolved into a continual Exhalation and *Sweat*. But Deſudations, which are, according to *Galen*, ſmall *Sweats*, or Moiſtneſſes, of no Signification or Benefit, affecting the whole Body, or rather the ſuperior Parts, are to be aſcribed to another Cauſe, as we obſerv'd, proceeding, as *Hippocrates* ſays, from a Faintneſs or Reſolution of the Body, or the Violence of an Inflammation; or, according to *Galen*, from a Reſolution of the retentive Faculty, occaſioning a Deſudation not only of the redundant excrementitious Humour, but of the alimentary Portion appropriated to the ſolid Parts. Theſe Things premiſed, concerning the Nature and Cauſes of *Sweat*, we proceed to the Prognoſtics which may be formed from them.

Of good and ſalutary Sweats, *prognoſticating Recovery.*

It often fortunately happens, that Perſons under acute Diſeaſes are freed from them by a profuſe and critical Eruption of *Sweat*; and with good Reaſon, ſince, as *Galen*, *in Lib. Art. Med.* obſerves, the whole Body is evacuated by *ſweating*. *Sweats* of this beneficial Sort are diſtinguiſhed from the contrary, by the following Properties or Characters.

Firſt, Theſe ſalutary *Sweats* appear when the Diſeaſe is concocted, and are attended with Signs of Concoction; as we are taught by *Galen*, *Lib.* 1. *de Criſibus*, *Cap.* 7. where he writes, that *Sweats* effecting a happy Criſis, happen not in the Beginning, but in the Increaſe, or at the Height of a Diſeaſe, when Nature has either made a perfect Concoction, or has done Part of her Work, and proceeds in the reſt with Vigour and Succeſs. This, then, is one conſiderable Character of a good *Sweat*, without which *Sweats* are ſo far from being ſerviceable, that they portend a long Diſeaſe, much Pain and Anxiety, Relapſes, and either no Criſis at all, or a fatal one; according to the Obſervations of *Hippocrates*, 1 *Epid. Sect.* 2. *Sweats*, then, appearing after Concoction, are Signs of a ſpeedy Criſis, and ſafe Recovery; but in a crude and unconcocted State, they ſignify either that the Diſeaſe will be converted into an Abſceſs of a bad Kind; or that the Criſis will be fruſtrated; or that the Diſeaſe will be very painful and lingering, or mortal; or elſe it foreſhews a Relapſe. A neceſſary Mark, then, of a ſalutary *Sweat* is, that it appear after Signs of Concoction.

Secondly, A good *Sweat* muſt make its Eruption on ſome critical Day. On this Subject we find *Hippocrates*, 4 *Aph.* 36. thus pronouncing: *Good Sweats in Perſons labouring under a Fever*, he ſays, *are thoſe which appear on the third, fifth, ſeventh, ninth, eleventh, fourteenth, ſeventeenth, twenty-firſt, twenty-ſeventh, and thirty-fourth Days; for theſe Sweats are critical: But thoſe which break out at other times, ſignify that the Diſeaſe will be painful and tedious, and the Patient ſubject to Relapſes.* *Galen*, in his Comment on this Place, ſays, that the fourth Day was either omitted by *Hippocrates* becauſe there are ſeveral Diſeaſes, of a very acute Nature, which have their Fits or Paroxyſms on odd Days, and their Criſes at the ſame time with their Fits; or that the fourth Day was omitted by the Negligence of ſome Tranſcriber: But, for our Part, we have often admired the divine *Hippocrates* on this Head, ſince we have rarely obſerved *Sweats* of a very good Kind appearing on the fourth Day.

A third Character of a good *Sweat* is, its ſucceeding ſome critical Rigor: For when Nature has ſucceeded in her Efforts to expel the thin and ſharp Humours out of the Veins into the ſuperficial Parts, it occaſions a vehement Rigor from a Diſperſion of the ſame Humours over the ſenſible Parts, and vellicating them, as we are taught by *Galen*, *Lib. de Rigor. Convulſ. & Palpit.* together with a Refrigeration of the extreme Parts; the Conſequence of which violent Rigor and Coldneſs, when Nature is ſtrong and vigorous, is, the exciting an acute and high Fever, by the breaking forth of the Heat, which, alſo, attenuates and rareſies thoſe Humours, and reſolves them into a copious *Sweat*. As an Inſtance to this Purpoſe, *Hippocrates*, 1 *Epid. Sect.* 2. *Ægr.* 6. obſerves a very good Kind of *Sweat* ſucceeding a Rigor in the Caſe of *Cleonactides*. *He was ſeized*, he ſays, *with a Rigor, had a high Fever, and fell into a copious Sweat*; the Conſequence of which was, a perfect and ſalutary Criſis. This is further confirmed in the Caſe of the hot Woman in the *Strand*, *ibid. Ægr.* 13. of whom he ſays, *On*

the eleventh Day she had a new Fit of a high Fever; on the fourteenth she fell into a Sweat, which proved critical, and removed the Fever. Another Instance we have in *Chærion*, 3 *Epid. Sect.* 2. *Ægr.* 5. who *on the seventeenth Day had a new Fit of a Rigor; had a high Fever; fell into a Sweat; underwent a Crisis; and was freed from his Fever.* It is on this Account that we are told by *Hippocrates*, 4 *Aph.* 58. *that a Rigor coming upon a burning Fever causes a Solution of the Disorder*; because, says *Galen*, such Rigors are succeeded by *Sweats*, or some other good Evacuations. A *Sweat*, then, following a *Rigor*, is a very good Sign; and therefore *Galen*, *Lib.* 3. *de Crisibus*, *Cap.* 3. says, that those who are seized with a Rigor sweat very well; and *Com.* 1. *in Prorrhet. that Sweats succeeding a Rigor are good, if they appear with Signs of Concoction.* And, as a further Confirmation, it is observed by *Hippocrates*, 1 *Epid. Sect.* 2. *Stat.* 3. that *the greatest Part of those who lay sick (at that Season), were seized with a Rigor about the Time of the Crisis, and especially those who had not been affected with an Hæmorrhage from the Nose; these latter had, besides, a Return of the Rigor with a Sweat.*

A fourth Qualification of a good *Sweat* is, that it be copious, hot, and break forth from all Parts of the Body: These are Marks which shew the Firmness and Strength of the Faculty, in equally diffusing the Heat over all Parts of the Body, and resolving the superfluous Humours with equal Efficacy on every Side into a *Sweat*, which it were impossible for it to effect if it were either very weak, or were contending with a malignant Disease; in which Cases the Evacuations of that Kind would be unequal, in some Parts much in Quantity, in others little, or, perhaps, nothing. The best Kinds of *Sweats*, then, you see, are hot, copious, and universal; whereas those which appear only on the Head or Thorax, or on all Parts of the Body, but little in Quantity, or cold, are esteemed very bad and pernicious; as we shall shew hereafter. The Truth of this Observation is confirmed by *Hippocrates*, in many Instances in the *Epidemics*; particularly, 3 *Epid. Sect.* 3. *Ægr.* 6. in the Case of *Pericles*, of whom he writes, "that on the fourth Day, "about Noon, a hot and copious Sweat broke forth over all his "Body, he had a Crisis, and was freed from his Fever without "any Relapse." And *ibid. Ægr.* 10. in *Nicodemus*, "who "on the four-and-twentieth Day fell into a profuse and hot "Sweat, which was universal, and proved critical, in the Re-"moval of the Fever." And of the morose Woman, *ibid. Ægr.* 11. we read, "that on the third Day, towards Night, "there was a plentiful Effusion of hot Sweat throughout all "Parts of the Body; she was freed from the Fever, and fell "asleep." Once more it is related of the Virgin of *Larissa*, *ibid. Ægr.* 12. "that after a Horror she fell into a hot and "plentiful Sweat over all her Body, underwent a Crisis, and "was freed from her Fever."

Fifthly, It is an additional Mark of a very good *Sweat*, that it be not only universal, copious, and hot, but discharges itself in Drops and Vapours. *Lib. Prognost.*

Lastly, A singular Mark and Character of the best and most salutary *Sweat*, given by *Hippocrates*, in the Book just quoted, is, that it effects an entire Solution of the Fever, or wholly frees the Patient from it. For this Reason, he always, in his *Epidemics*, gives it as a distinguishing Characteristic of a critical and most beneficial *Sweat*, that the Patient is, by means thereof, ἀπυρος, "free from a Fever;" or ἄπυρος ἐκρίθη, "that he had "a Crisis with the Removal of his Fever;" or ἱδρώσεν ἄπυρος, "his Fever went off with a *Sweat*." Those *Sweats*, also, according to *Hippocrates*, *Prognost.* justly deserve the Name of salutary, which, by their free and plentiful Effusion in all Parts of the Body, though they do not entirely remove the Fever, are, yet, the Cause that the Patient can more easily support himself under it; since they alleviate the Disease, and diminish the Symptoms. But these *Sweats* differ from those of the best Kind, in not effecting a perfect Crisis, though they are Prognostics of Recovery at a longer Distance of time. *Sweats* of this Kind were often observed by *Hippocrates*, particularly of him who lay ill in the Garden of *Dealces*, 3 *Epid. Sect.* 1. *Ægr.* 3. in whose Case it is related, "that on the seventeenth Day his extreme "Parts were cold; they covered him with Clothes; he had a "high Fever; sweated over all his Body; found some Relief, "and had the freer Use of his Reason; but the Fever did not "leave him, and he had a Thirst. On the twentieth Day he "slept; had the perfect Use of his Reason; had an Eruption "of Sweat; was without a Fever, or Thirst;" which, however, return'd upon him; and it was the fortieth Day, when, after frequent Evacuations of white pituitous Matters by Stool, he fell into a profuse and universal *Sweat*, and had a perfect Crisis.

Thus we have given you the Marks or Characters of the best Kinds of *Sweat*, and such as are critical, which you will find comprehended by *Hippocrates*, in his Book of *Prognostics*, in the following Words: "In all acute Diseases the best *Sweats* are "such as happen on a critical Day, and entirely remove the "Fever. They are good, also, which arise over all the Body, "and render the Disease more tolerable to the Patient; but "those which produce no such Effect, are of no Service." And good *Sweats* are not only known by these Marks in themselves, but by the Attendance of other good Signs, as a good Hæmorrhage, or some other salutary Evacuation; and, also, as we said, by the Patient's finding himself in some measure relieved by them. *Sweats* of this happy Influence were observed by *Hippocrates* in many Instances, particularly *Cleonactides*, *Maton*, the sick Woman who lived in the Strand, and *Melidia*, recorded in the first of the *Epidemics*; and in the Patient who lay ill in the Garden of *Dealces*; *Chærion*, *Pericles*, the Virgin of *Abdera*, *Anaxion*, *Nicodemus*, the morose Woman, and the Virgin of *Larissa*; whose Cases you find related in 3 *Epid.* with many others: In whose Histories the intelligent Reader may find the forementioned Signs, and Matter to exercise his Judgment in forming such salutary Prognostics as will not fail to justify themselves by the Event.

Of bad and pernicious SWEATS, *which portend a fatal Event.*

Hippocrates, in his Book of *Prognostics*, speaking of bad *Sweats*, makes Degrees of them; and tells us, that such *Sweats* are in a great measure bad, as neither remove the Fever, nor render it more tolerable to the Patient; that is, afford him not the least Relief, though proceeding from all Parts of the Body. A worse Sort than those are such as neither proceed from the whole Body, nor alleviate the Disease: Still more pernicious are *Sweats* which exasperate the Disease; but the worst, and most pernicious of all are cold *Sweats*, and such as arise only about the Head, Face, and Neck; for such *Sweats*, he says, in a high Fever, portend Death; in one of a milder Nature the long Continuance of the Disease. But we shall consider all the bad Kinds of *Sweat* distinctly, under some general Heads, for the sake of Accuracy, and that we may be the better enabled to form just Prognostics from them.

First, then, we shall take into Consideration such bad Kinds of *Sweat* as appear in a crude State of the Disease, and unattended with the least Signs of Concoction. Secondly, We shall treat of bad *Sweats* with regard to their Quantity; or as they are more or less copious. Thirdly, We shall consider them with respect to Heat and Coldness. Fourthly, with regard to the Parts of the Body whence they proceed. Fifthly, as they injure, or at least no way relieve the Sick. And, lastly, as they appear attended with other bad Signs.

In examining the first general Head, that we may have a clearer Notion of what it contains, we shall distinguish *Sweat* into periodical, critical, and symptomatical. We call that a periodical *Sweat*, which attends the Periods or Returns of intermittent Fevers; as Tertians, or Quartans. Such was the *Sweat* observed by *Hippocrates*, 7 *Epid. T.* 4. in the Case of *Pythodorus*. A critical *Sweat*, of which we have spoken before, is such as appears, in continual Fevers, on some critical Day; and either entirely removes the Fever, or diminishes it, and relieves the Patient: And the Effect of this *Sweat* we call a Crisis, either perfect or imperfect. The Characters of a critical *Sweat*, we have told you, are, its Appearance with manifest Signs of Concoction, on a critical Day, when Nature is strong and vigorous; that it is hot, copious, and universal, yet not diminishing the Strength; and removes, or much diminishes the Fever, with its Symptoms. To a critical *Sweat* is opposed a symptomatical one, which happens in manner of a Symptom, and is never of any Benefit, but generally attended with destructive Signs; and portends Death, or, at least, a long Continuance to the Disease, with many Relapses, and much Pain and Trouble. On all such *Sweats* we bestow the Appellation of symptomatical, as we do, also, on all other Excretions which happen when the Disease is crude, or when no Signs of Concoction appear. Wherefore all bad *Sweats* appear in a crude State of the Disease, when there is no manifest Sign of Concoction. For which Reason *Hippocrates*, 2 *Epid.* near the Beginning, makes the *Sweats* which appeared at the Beginning of an epidemic Fever, there described, to be Prognostics of a difficult and dangerous Crisis: And these Kinds of *Sweats* are the worse, if they appear only on the Head, Neck, Throat, or Thorax; and if they are cold, scanty, or cease immediately; or if they are copious, continued, or immoderate, they are worst of all. Secondly, we are to speak of bad *Sweats*, with respect to Quantity, as they are copious, or scanty, or none at all. *Sweat* is said to be much, and copious, when it breaks forth in a thick and profuse manner; when it is assiduous and continual; and when it is both assiduous and copious. Copious *Sweats*, according to *Galen*, *Lib.* 3. *de Symp. Caus.* are occasioned either by the Rareness of the Body, or the Thinness of the Matter evacuated. *Sweat* which flows for either of these Reasons, comes not forth in a pressing and profuse manner, but assiduously and constantly.

conſtantly. Much Sweating, therefore, in Fevers, if occaſioned neither by the Thinneſs of the Matter, nor the Rareneſs of the Pores, (which ſort of Sweat, according to *Galen*, in 4 *Aph.* 41. is never copious) always indicates a Redundance of Humours, as we are told by the ſame Author, in 4 *Aph.* 42. And hence, *Hippocrates*, in the firſt-mentioned *Aphoriſm*, ſays, that "Much Sweating from Sleep, without any manifeſt "Cauſe, indicates too plentiful Feeding; but if it happens, "though the Patient takes no Food, it ſhews that the Body "wants Evacuation." Much Sweat, ſays *Galen*, ſignifies Plenty of Excrements: Theſe Sweats, therefore, appearing in Fevers, and affecting nothing towards a Criſis, are conſtantly pernicious, for this very Reaſon, that they indicate a Redundance of Humours, which requires a long Time for Nature to digeſt and ſubdue; whence in acute Diſeaſes, which extinguiſh Nature in a ſhort time, they often portend Death. Hence *Hippocrates*, 4 *Aph.* 42. ſays, that "A conſtant Flux of much "Sweat, if cold, indicates a ſevere Diſeaſe; if hot, a milder:" Becauſe, as *Galen* ſays in his Commentary, both of them are Signs of a Multitude of Humours, the cold Flux of cold Humours, which are the worſt; and the hot of hot Humours, which are leſs dangerous than the other. Theſe Sweats neither remove nor alleviate the Fever, and break forth when the Diſeaſe is crude; and therefore are, at beſt, Prognoſtics of a long Diſeaſe, ſubject to Relapſes, and attended with much Pain and Trouble. The Author of 1 *Prorrhet.* 58. calls thoſe Sweats unſerviceable in acute Fevers; and *Hippocrates*, 1 *Epid. Sect.* 2. ſpeaking of an epidemic continual Fever, ſays, that the Patients ſweated much; but were ſo far from being relieved, that they were rather injured by it.

Sweats not copious, but yet conſtant or perpetual, are, alſo, bad, and, for the moſt part, mortal; ſince they are occaſioned, as *Galen* ſays, *Lib.* 3. *de Sympt. Cauſ. Cap.* 2. and *Com. in* 4 *Aph.* 41. either by the Rareneſs of the Pores, or Imbecillity from a Reſolution of the Habit of the Body, as the Caſe is in a Syncope: Theſe Sweats then, are all pernicious, as indicating a Languor of Nature; but the worſt are thoſe ſymptomatical Sweats which are copious as well as conſtant, ſince they indicate an extreme Weakneſs, as well as an extraordinary Redundance of Humours, in which Circumſtance Death is unavoidable, as is confirmed from the Inſtances of *Eraſinus*, 1 *Epid. Sect.* 3. *Ægr.* 8. and the phrenitic Patient, 3. *Epid. Sect.* 3. *Ægr.* 4. of the firſt of whom it is ſaid, that *He had a Fever with perpetual Sweating:* And of the other, that *He vomited much thin, virulent, and æruginous Matter; had a Fever, attended with an Horror, and a copious and continual Sweat over all his Body.* Some read this Place not according to *Galen*, as above, but from other Copies, thus, *He had a copious and continual Sweat, which affected his Head and Neck during the whole Day.* And it is uſual with Perſons under a Lipothymy to ſweat in their Head and Neck. But this is no Reaſon that we ſhould not, with *Galen*, read δ' ὅλε τῦ σώμαlo, *over all the Body*; ſince every Phyſician knows, that Perſons under a Phrenſy, before their Death, fall into a Sweat, from an univerſal Reſolution of the Parts: Hence we conclude, that copious Sweats, in acute Diſeaſes, not being critical, are not only of no Benefit, but, for the moſt part, fatal, and, when attended with a Languor, or total Decay of Strength, are moſt certain Signs of approaching Death; and that conſtant Sweats, whether copious or not copious, are alike pernicious in acute Diſeaſes.

Sweat, little in Quantity, is uſually of the ſame pernicious Signification as when much. *Galen*, *Lib.* 3. *de Symptom. Cauſ. Cap.* 2. writes, that ſmall Sweats are occaſioned by the ſmall Quantity, or groſs and glutinous Quality, of the ſuperfluous Humours, or the Straitneſs of the Pores, which are rendered narrower, either by Contraction or Obſtruction. The cutaneous Paſſages are obſtructed by thick and glutinous Juices, and cloſed up, or contracted from an Atrophy, Refrigeration, or Softneſs: Theſe little Sweats, if they break forth on a critical Day, are an undoubted Indication, that Nature makes fruitleſs Efforts to expel the Humours; and that its Attempts are fruſtrated by their Thickneſs or Viſcidity, or the Narrowneſs of the Paſſages. But where there is no Conſtriction of the Paſſages (as may be known, becauſe the Skin is neither contracted by an Atrophy, nor much refrigerated, nor remarkably ſoft) and there are Signs of a Redundance of Humours, little Sweats indicate Plenty of groſs and viſcid Humours; and if the Strength, at the ſame time, be very much exhauſted, are mortal; and ſo much the more, if they appear without Signs of Concoction; in which Caſe, all Excretions are ſymptomatical, and indicate a Redundance of Humours. Sweats of this Kind ſhew, that Nature had begun to expel the Humours through the Skin, and could eliminate no more than the thinneſt Portion of them, which muſt prove inſufficient for a Solution of the Diſeaſe. Under this Head may be reduced Sweats which ceaſe immediately after their Eruption, and are condemned by *Galen*, *Com.* 1. *in* 1 *Prorrhet.* Sweat, therefore, little in Quantity, is always bad.

But the worſt and moſt fatal of all Sweats, is that thin ſcanty ſort of Sweat which the *Greeks* call *Ephidroſis*, and the *Latins Deſudatio*, or *Mador*, "A Deſudation, or Moiſtneſs." This Kind of Sweat appears ſometimes on all Parts of the Body, but generally about the Head, Neck, Throat, Breaſt, and ſometimes about the Extremities. Of this Subject we find *Galen* diſcourſing, in his Comment on the *Prorrhetica*, where he ſays, "We meet with the Word *Ephidroſis* ſeveral times "in this Book; but we are not certain whether the Author "means by it, thoſe Sweats which appear about the Head and "Thorax, or thoſe which break forth from all Parts of the "Body, but in a weak and faint manner, and of no Benefit "to the Patient." Both of theſe indeed are bad; but the worſt of them is what appears only on the upper Parts: For ſince all *Deſudation* demonſtrates either a Plenitude in the ſweating Parts, or an Imbecillity of the retentive Faculty, if either of theſe affects the Parts about the Head and Thorax, it is a worſe Sign, than if it were in any other Region. Of the Judgment that is to be made of Sweats indicating a Redundance of Humours, we have ſaid enough already; but we may conclude the other Sort to be, alſo, pernicious, ſince they proceed from an extreme Decay of Nature, which is too weak to retain the alimentary Humid of the ſolid Parts, diſperſed by Oppreſſion or Reſolution. Theſe *Deſudations* are diſtinguiſhed from thoſe occaſioned by a Multitude of Humours, in that they generally break forth about the Forehead, Neck, Breaſt, or extreme Parts, with a ſlight Moiſtneſs, not increaſing, ſeldom hot, but generally coldiſh, with a very low Pulſe, and other Signs indicating Nature to be in a very languid State. Of this Nature are the Sweats, which owe their Riſe to immoderate Evacuations, concerning which we read, 1 *Prorrhet.* 126. *A ſlight Sweat with a Refrigeration, after an Hæmorrhage from the Noſe, is bad.*

But is it not a bad Sign in ſome acute Diſorders not to ſweat at all? Yes, certainly, in all thoſe which, as *Galen*, *Lib.* 3. *de Criſibus*, has taught us, are critically terminated by Sweats: Such are all continual, and eſpecially burning Fevers, which form their Criſes by Sweat, or ſome other laudable Evacuation; whence the Fever is either entirely removed, or much diminiſhed, with its Symptoms, and the Caſe of the Patient altered much for the better. Without ſuch an Evacuation we are not to truſt to any Remiſſion of the Diſeaſe, as *Galen*, in 3 *Epid.* adviſes, agreeably to that of *Hippocrates*, 2 *Aph.* 27. *We are not to place our Dependence on Things which give Relief after an unaccountable manner.* The Neceſſity of ſuch Caution is exemplified in the Inſtances of *Hermocrates*, 3 *Epid. Sect.* 1. *Ægr.* 2. and the Virgin Daughter of *Euryanactes*, *ibid. Sect.* 2. *Ægr.* 6. Of the firſt it is ſaid, *On the fourteenth Day he was free from a Fever, did not ſweat, ſlept, and was in his perfect Senſes: His Urine was the ſame. About the ſeventeenth Day, the Diſeaſe returned, the Patient was very hot, and on the following Days he had an high Fever, his Urine was thin, and he was delirious. On the twentieth Day he had another Criſis, and was free from a Fever, but ſweated not.* Such deceitful Remiſſions of Diſeaſes without Sweat, or any other laudable Evacuation, are diſtinguiſhed from ſuch as may be truſted by the ſubſequent Signs, which, in the latter, are very good, in the former bad; as appears in *Hermocrates*, from what followed after the Criſis. *On the twentieth Day he had another Criſis, was free from a Fever, ſweated not: He had all the Time hitherto an Averſion to Food; had the Uſe of his Reaſon, but not of his Speech; his Tongue was dried up, but without Thirſt; and his Sleep was comatous. On the twenty-ſeventh he died.* And thus you ſee, that *not to ſweat at all*, in burning Fevers, is ſometimes a Prognoſtic of a fatal Event.

We proceed to take into Conſideration thoſe Sweats which are *cold*, ſince they are often obſerved to be mortal in acute Diſtempers; but, firſt, we are to have a thorough Inſight into the Generation and Cauſes of them, which will very much illuſtrate the Reaſonableneſs of grounding Predictions upon them.

Firſt, then, Cold Sweats, as they conſiſt of a cold and crude Matter, demonſtrate, in continual Fevers, a Redundance of crude Humours, as *Galen* ſhews, *Com. in* 4 *Aph.* 42. eſpecially when there is a copious Eruption of them. Theſe Sweats, according to *Galen*'s Opinion, *Com. in* 4 *Aph.* 37. *are generated when the Humours putrefy in the Veſſels; and Nature, which moderates and rules the ſolid Parts, and is, according to* Hippocrates, *the natural Heat, is either wholly or nearly extinguiſhed; the Matters evacuated are indeed cold to the Senſe, though the Heat, proceeding from the Putrefaction, may, for all that, be very violent; for which Reaſon it is a very deſtructive Sign, as it ſhews, that the exceſſive Quantity of Humours in the animal Body is endued with ſo great a Coldneſs, as not to be heated by either the natural or febrile Heat.* Cold Sweats, then, indicate a Redundance of very cold Humours, by which Nature is either totally,

totally, or very nearly, extinguiſhed. But when there happens to be kindled in the Veſſels a moſt violent Heat, from the Putrefaction of the Humours, and the natural Heat retires to the inward Parts, there is a Refrigeration of the Extremities, with a very cold Humour, without conſidering their acting one upon another; but when there comes to be a mutual Acting and Reſiſtance of the Humours, it is neceſſary, either that the cold Sweat ſhould be heated, or the Heat ſoon extinguiſhed by it. Agreeable to this is the Obſervation of *Galen*, in *Lib.* 4. *Aph.* *In Diſeaſes not acute, but of a milder Nature, if the natural Heat, after maintaining itſelf a long Time, prevails not at laſt, it is extinguiſhed, which happens much ſooner in a violent Diſorder from a ſpeedy Reſolution of the Strength.* Juſtly, therefore, is it ſaid by *Hippocrates*, 4 *Aph.* 37. that *Cold Sweats, in an acute Fever, prognoſticate Death; in a milder one, the long Continuance of the Diſeaſe: Since*, as *Galen*, in his Comment, ſays, *if the Fever be of a gentler Kind, the Patient may recover, the Redundance of the Humours being concocted, and ſubdued by Length of Time. But an acute Fever is both a Cauſe, and a very pernicious Sign: As a Cauſe, it naturally effects a Reſolution of Bodies; and as a Sign, it ſhews the Multitude of Humours, which are too intenſely cold to be altered by the febrile Heat.*

But perhaps you will aſk, How it is poſſible for theſe Humours, which are cold, and, conſequently, unfit for Motion, and much more under an extreme Weakneſs, and almoſt Extinction of Nature, to be conveyed to the Skin?

I anſwer, That the Humour being in ſome meaſure heated by the febrile Heat, though naturally unfit for Motion, is conveyed to the Skin, where the adventitious Heat it had received being reſolved, it begins to cool again, and ſo turns out cold.

Cold Sweats, then, in acute Diſeaſes, are always of fatal Signification, whether much or little in Quantity, howſoever they come forth; or whether they proceed from the whole Body; or from the Head, Neck, and Breaſt; or from the Extremities. Inſtances of this were obſerved by *Hippocrates*, in the firſt and third Books of the *Epidemics*, in *Philiſcus*, the Wife of *Dromeades*, the Woman who lay ill *in Foro Mendacium*, and *Philiſtion*, who all died with cold Sweats upon them. And the moſt deſtructive of this kind is a petty thin cold Sweat, which comes out about the Head, or extreme Parts, as the Hands and Feet, becauſe they indicate a near Extinction of the Faculty. Juſtly, therefore, was it ſaid by *Hippocrates*, *Lib.* *Prognoſt.* that *Cold Sweats are worſt, and, in acute Diſeaſes, indicate Death; in milder ones, a long Continuance of the Diſorder.* Cold Sweats, then, are bad in all Caſes; agreeably to the Obſervations of *Hippocrates*, 3 *Epid.* *Sect.* 3. *Stat.* *Peſt.* where, among other Symptoms peculiar to the reigning Fevers of that Seaſon, were *Cold unſeaſonable Sweats, which came forth in a plentiful manner, and held the Patient continually.* The deſtructive Tendency of theſe Sweats is confirmed by other concomitant Signs; which, taken all together, and eſpecially ſuch as are ſubſequent, are neceſſarily pernicious. Of this kind were thoſe obſerved by *Hippocrates*, in *Philiſcus*, and the others juſt mentioned. Of *Philiſcus*, 1 *Epid.* *Sect.* 3. *Ægr.* 1. it is ſaid, "At the Cloſe of the fifth Day he grew "ſpeechleſs, fell into a cold Sweat, and his extreme Parts were "livid: On the ſixth Day about Noon he died." It is farther remarked of this Patient, that "He was continually under "a cold Sweat." The Wife of *Dromeades*, *ibid.* *Ægr.* 11. "On the ſixth Day in the Morning had a new Fit of a Rigor, "ſucceeded by a ſpeedy Return of the Heat, and a Sweat all "over her Body; her extreme Parts were cold; ſhe was de"lirious; her Reſpiration was great and rare [*ἀραιὸν*. See "ARÆON], and ſoon after ſhe died in Convulſions, which "began at the Head." And of the Woman who lay ill *in* *Foro Mendacium*, 3 *Epid.* *Sect.* 2. *Ægr.* 12. we read, that "On the ſeventh Day ſhe was ſeized with a Return of a Ri"gor, ſucceeded by an high Fever, with an intenſe Thirſt, "and Jactations [*βλησεισμὸς*. See BLESTRISMUS]: Towards "Evening ſhe fell into an univerſal cold Sweat, and her ex"treme Parts were cold." From theſe Inſtances, and what has been ſaid, it abundantly appears, that cold Sweats in acute Diſeaſes are deſtructive, and conſtantly portend Death; which may be predicted with the greater Certainty, if thoſe Sweats make their Eruption on ſome critical Day, and are ſucceeded by ſome pernicious and mortal Sign.

Let this ſuffice concerning deſtructive cold Sweats; and let us now proceed to conſider Sweats, with reſpect to the Partiality, and the Parts of the Body whence they break forth. For Sweats, as we have ſaid, are very good and ſalutary, when they make their Eruption from all Parts of the Body, becauſe they demonſtrate Nature to be robuſt, and under no inward Impediment, from a malignant Diſorder, or any morbific Cauſe, which might fruſtrate her Efforts in making Excretions of the Humours from all Parts. But, on the contrary, when any one of the internal Viſcera is ſeized with a violent Inflammation, or oppreſſed with a Multitude of Humours, there ariſes a partial and unequal Sweat. Such Sweats, therefore, as make their Eruption not from the whole Body, but from the Head or Thorax, are, according to *Hippocrates*, *Prognoſt.* of the worſt Kind; and, whether they be hot or cold, in acute Diſeaſes portend Death; in milder Diſorders, a long Continuance, Relapſes, and much Pain and Sickneſs. *Hippocrates*, 1 *Epid.* *Sect.* 1. *Stat.* 1. ſpeaking of epidemic, and very mortal kind of Fevers, ſays, that the Patients "were "under a perpetual Sweat, but not in all Parts of the Body." And a little after, enumerating the Symptoms by which burning Fevers were known to be mortal, even at the Beginning, ſays, that "The Patients ſweated a little about the Forehead "and Clavicles; but not one of them in all Parts of the Bo"dy." Hence the Author of 1 *Prorrhet.* 39. had Reaſon to ſay, that "Sweats, and eſpecially about the Head, with a kind "of Uneaſineſs [*κεφαλύσφοροι*], in acute Diſeaſes, are a bad "Sign." All Sweats, therefore, which proceed not from the whole Body, are bad, as being Prognoſtics of Death, or a long Sickneſs. Juſtly, therefore, has *Hippocrates* ſaid, *Lib.* *Prognoſt.* that "The worſt Kind of Sweats are thoſe which "are cold; and eſpecially when they happen only about the "Head, Neck, and Face: For ſuch Sweats, in acute Fevers, "portend Death; in leſs violent Diſtempers, their long Con"tinuance." And very right is the Judgment which *Galen* on the *Prorrhetica*, paſſes on them, when he ſays, "Every "*Deſudation*, that is, Sweat breaking forth about the Fore"head, the fore or hinder Part of the Neck, or Clavicles, "indicates an Imbecillity of the retentive Faculty, or a Re"dundance of Humours." And, in another Paſſage of the ſame Comment, he tells us, that "Such Sweats are not good, "both becauſe they ariſe on the ſuperior Parts, and, alſo, for "a double Reaſon, which is, that they proceed from a Lan"guor of the Faculty, or an Oppreſſion of the ſame in its "Original." Sweats ariſing in the Head and upper Parts, are very bad, particularly in a Suppuration and Phthiſis, of which the Author of the *Coac.* 402. ſays, "They who are affected "with a Suppuration, eſpecially from a Pleuriſy or Peripneu"mony, have their Diſorder attended with Heats, which are "but ſlight in the Day, but more intenſe at Night; they, alſo, "ſpit forth ſomething not worth Notice, ſweat about the "Neck and Clavicles, have hollow Eyes, and red Cheeks." With good Reaſon, therefore, are ſuch Sweats eſteemed mortal in an acute Fever, as indicating an Extinction of the Faculty, before it can accompliſh the Concoction of the Humours; and when they are occaſioned through an Imbecillity of the retentive Faculty, being unable to retain the Humour, or even the alimentary Juice proper to the Solids, portend, in a Fever, not only unavoidable but ſpeedy Death, and with the greater Degree of Certainty, if they are, alſo, cold; of which Nature were thoſe obſerved in *Pythion*, and the Woman *in Foro Mendacium*, 3 *Epid.* before-mentioned; and in *Meton*, *Ariſtocrates*, and *Pherecydes*, 7 *Epid.* *T.* 47. 57. 91. and in many others, who all died. But if the Diſeaſe be more favourable, and the Strength extraordinary, ſuch Sweats indicate not Death, but the long Continuance of the Diſtemper; as it was in the Caſe of the Patient who lay ill in the Garden of *Dealces*, 3 *Epid.* *Sect.* 2. *Ægr.* 3. of whom *Hippocrates* ſays, that "On the "fourth Day there flowed from his Left Noſtril a ſmall "Quantity of pure Blood; he had a Sweat about the Head "and Clavicles, a Tumor of the Spleen, and a Pain in the "Thigh on the ſame Side."

Sweats are, alſo, known to be bad, from their being unattended with any other Evacuation; and more from the Injury the Patients experience from them. For when a Sweat is found to be ſo far from being beneficial that it proves of ill Conſequence to the Sick, it is to be eſteemed one of thoſe pſeudo-critical Signs which determine nothing, and, conſequently, according to *Galen*, *Com.* *in Prorrhet.* are mortal. *Hippocrates*, in his Book of *Prognoſtics*, pronounces ſuch Sweats as neither remove the Fever, nor render the Diſeaſe more tolerable to the Patient, to be uſeleſs and bad, and Prognoſtics either of Death, or a long Sickneſs. And the Author of the *Prorrhet.* 58. ſays, that "Much Sweating, in acute or high Fevers, is "of no Service to the Patient," as not removing the Fever. And, *ibid.* 7. "Burning Heats in the Hypochondrium, re"maining after a Refrigeration of the Fever, are a bad Sign; "and eſpecially when attended with Sweats:" Becauſe, as *Galen* ſays, in his Comment, they extend not over the whole Body; but are ſmall and inconſiderable, and incapable of extinguiſhing the flammeous Heat in the Hypochondrium. Again, 1 *Prorrhet.* 68. it is ſaid, that "They who lie waking in a "Sweat, and have a Return of the Fever [*ἀναθερμαινόμενοι*], "are in a bad State." And, *ibid.* 67. "A fiery red Face, "and Sweating, in a burning Rigor, are bad;" becauſe, if the Sweat were good, the Heat of the Face would be reſolved by it, which the Sweat not doing, indicates a Malignity. To the

the ſame Purpoſe, but more expreſs, is 4 *Aph.* 56. "If a Per-
"ſon under a Fever fall into a Sweat, and finds no Remiſſion
"of his Fever from the ſame, it is a bad Sign; for the Diſeaſe
"is prolonged, and a Redundance of Humidities is indicated."
Such Sweats, in an acute Fever, portend Death; in a more gentle one, a long Continuance.

Among bad Sweats are, alſo, to be reckoned, all thoſe which precede, accompany, or follow, other pernicious Signs. From ſuch Sweats as theſe we may prognoſticate a fatal End; ſince, if ſucceeded by bad Signs, they prove themſelves of the Number of thoſe critical undetermining Signs, by which the Patient is ſo far from being relieved, that he finds himſelf worſe; and, conſequently, are to be eſteemed mortal. Of pernicious Signs ſucceeding bad Sweats we find *Hippocrates* ſpeaking, 1 *Epid. Sect.* 1. where he ſays of ſome Patients under an epidemic Fever, that "They had continual Sweats, but not diffuſed over
"the whole Body, and their extreme Parts were refrigerated,
"ſo as to become almoſt incapable of recovering Heat." And the Author of the 1 *Prorrhetica* 126. ſays, that "An Hæmor-
"rhage from the Noſe, with thin cold Sweats, and a general
"Refrigeration, indicate Malignity, and are bad for the Pa-
"tient." And, *ibid.* 102. "They who in the Beginning (of
"acute Diſeaſes) are affected with cold Sweats, make con-
"cocted Urine, and are in a burning Heat, then unaccount-
"ably [ἀκρίτως] refrigerated, till a ſudden Return of the hot
"Fit, and moreover labour under a Torpor, Coma, and Con-
"vulſions, are in a very dangerous State." Once more, *Coac.* 40. "Refrigerations, with thin cold Sweats, ſucceeding a
"Rigor [for ῥιγῶν I read, with *Proſper Alpinus*, ῥιγέων], are
"bad." Of this Nature were the Sweats obſerved by *Hippocrates*, in the Wife of *Dromeades*, 1 *Epid.* the Virgin Daughter of *Euryanactes*, and the young Woman who lay ill *in Foro Mendacium*, 3 *Epid.* and in the Wife of *Theodorus*, *Ariſtocrates*, and the Wife of *Euxenus*, 7 *Epid. T.* 27. 52. 58. who all died. Of the Wife of *Dromeades* we have taken Notice above; and of the Daughter of *Euryanactes* it is ſaid, that "On the
"ſeventh Day after a Criſis ſhe was ſeized with a Rigor, was
"feveriſh, and ſweated: The eighth Day after the Criſis ſhe
"had ſomething of a Rigor; and afterwards her extreme Parts
"became cold, and always ſo continued. About the tenth
"Day, after a Sweat which ſhe had, ſhe was delirious; but
"ſoon recovered her Senſes." Of the young Woman who lay ill *in Foro Mendacium*, we read, that "On the ſecond
"Day all the Symptoms were exaſperated; ſhe had frequent
"and unſeaſonable Stools, had no Sleep, was diſturbed in her
"Reaſon, and ſweated a little. On the third Day ſhe was
"very uneaſy, thirſty, nauſeating, very reſtleſs and impatient,
"delirious, and her extreme Parts were cold and livid." The Wife of *Theodorus* "had firſt a ſmall Eruption of Sweat about
"the Forehead, which, after a conſiderable Time, diffuſed it-
"ſelf over the whole Body and Feet, after which the Fever
"ſeemed to remit. The Body of the Arteries ſeemed cold to
"the Touch; but thoſe at the Temples had more than an or-
"dinary Degree of Pulſation: Her Breath grew ſhort; ſhe
"was delirious at every Turn, and ſhe became worſe on all
"Accounts." The Wife of *Euxenus*, "Had a Remiſſion of
"her Fever, with a copious Sweat; was much refrigerated;
"laboured under an Aſthma of various Kinds," and ſo died. By theſe, and other Inſtances which might be given, it appears, that all Sweats which are ſucceeded by pernicious Signs, have a deſtructive Tendency.

Sweats are, alſo, pernicious, when attended with bad Signs and Symptoms; and this is confirmed by *Coac.* 10. where it is ſaid, that "They who are moleſted with frequent thin or cold
"Sweats and Rigors by Turns, are in a very dangerous Way."
And, *ibid.* 13. "They who labour under frequent Returns of
"Horrors and Sweats, are in a very dubious State." Again, *ibid.* 53. "Sweats with a kind of Uneaſineſs, in acute Diſ-
"eaſes, are bad." And, *ibid.* 327. compared with 1 *Prorrhet.* 127. "An Hæmorrhage at the Noſe, on the contrary
"Side is bad; as, for Inſtance, if it proceed from the Right
"Noſtril, in a Tumor of the Spleen; but it is worſe if at-
"tended with a Sweat." And, *ibid.* 35. compared with 1 *Prorrhet.* 74. "Fevers, attended with a Coma, Laſſitude,
"Dimneſs of Sight, Want of Sleep, and Sweats, are malig-
"nant." Such were the bad Symptoms attending the Sweats under which *Ariſtocrates* laboured. 7 *Epid. T.* 52.

The ſame Judgment is to be made of Sweats ſucceeding very bad Signs or Symptoms. Thus, 1 *Prorrhet.* 126. "A ſmall
"Sweat, with a general Refrigeration ſucceeding an Hæmor-
"rhage at the Noſe, is malignant and pernicious." And we may ſay the ſame of it, when ſucceeding any bad Evacuation in general, whether it be an immoderate Hæmorrhage, or Diſtillation of Blood by Drops from the Noſe, in burning Fevers, or a bad Flux of the Belly, or Vomiting. Sweat therefore, conſequent upon bad Signs, is very pernicious, and eſpecially if it neither removes nor alleviates thoſe bad Symptoms.

Thus it was in the Caſe of the Wife of *Olympiades*, 7 *Epid. T.* 49. of whom we read, that "Her Speech was not reſtored,
"nor was ſhe any way relieved; that her Eyes were caſt down,
"her Reſpiration was ſublime [πνεῦμα μέσιον. See PNEU-
"MA], and performed through the Noſe; ſhe had an ill Co-
"lour, and, when ſhe was near Death, had a Sweat about her
"Feet and Legs." *Proſper Alpinus, de Præſag. Vit. & Mort. Ægrotorum.*

A FEBRILE DIARRHOEA.

The Matter of a Diarrhœa is the Mucus, Lymph, *Gluten*, Pus, Sanies, or Blood, from the Noſe, Mouth, Fauces, Oeſophagus, Stomach, Liver, Gall-bladder, Pancreas, Inteſtines, and Meſentery: It ariſes from too great an expulſive Force of theſe Subſtances into the Inteſtines, and a Weakneſs of the contracting Force of the Inteſtines; or from ſome Obſtruction of the abſorbing Veſſels of the Inteſtines, which prevents the Admiſſion of what ought to paſs through them.

Hence it appears, that Fluxes of the Belly in Fevers are of various Kinds, with reſpect to the Matter, Cauſe, Effect, and Event; they are, therefore, ſometimes utterly incurable; and ſometimes colliquative, in which Caſe they ſeldom admit of a Remedy.

If a *Diarrhœa* perſeveres long, it diſpoſes the abdominal Viſcera more and more to the ſame Diſorder; weakens them, excoriates, and inflames them; empties and exhauſts the other Veſſels and Viſcera: Hence ariſe an Atrophy, Emaciation, Weakneſs, a Dyſentery, an Inſpiſſation of the Fluids throughout the whole Habit of the Body; a Laxity of the Solids; a Loſs of the Fluids; a *Leucophlegmatia*; Dropſy; and Tabes.

The Cure is performed by deſtroying the Acrimony which irritates the Inteſtines, and by expelling it by means of Emetics, Purges, and Clyſters; by corroborating the relaxed Parts; by mitigating the Violence of the Diarrhœa with Narcotics; by determining the morboſe Matter to ſome other Excretion, as thoſe by Sweat and Urine; by diminiſhing the Cauſe, and correcting it at the original Fountain.

For an Account of Prognoſtics from Stools, ſee the Article DEJECTIO.

FEBRILE ERUPTIONS.

The Matter of inflammatory Puſtules is, generally, ſomething which cannot paſs the cutaneous Veſſels, but ſticks therein; and they are excited by the Force of the circulatory, ſecretory, and excretory vital Powers: Hence Eruptions are various, according to the Variety of Cauſes which produce them; and on this account Fevers acquire different Appellations, from the different Eruptions with which they are attended, as *Eryſipelatous*, *Scarlet*, *red Petechial*, *purple Petechial*, *Morbilloſe*, *and Varioloſe*.

It is cuſtomary to treat of the laſt three ſeparately; as for the three firſt, the Diagnoſtics, and Prognoſtics are eaſily found.

The Cure is not difficult; for it only requires, that the eruptive Matter be kept in a moveable State, by the Exhibition of a ſufficient Quantity of light Fluids, and preſerving a due Moderation of the vital Powers; for by this means they ſoon come to a Period, with a Deſquamation of the Cuticle.

The other febrile Symptoms, which are ſimilar to theſe, and of the like kind, require the ſame Treatment as the Diſeaſes on which they depend.

Hence we learn, what Judgment is to be formed of the Variety of acute Fevers; for thoſe in which the febrile Motion, when once began, is continued equably to the End, are called *Continual Fevers*; thoſe in which the febrile Force remits, and is again exaſperated alternately, in ſuch a manner, however, that the Fever never ceaſes, are called *Continual Remittent Fevers*; thoſe, laſtly, which remit ſo entirely, that the Patient is abſolutely free from a Fever in the Intervals betwixt the Paroxyſms, are called *Intermittents*.

A CONTINUAL FEVER.

The moſt ſimple of continual Fevers, is an *Ephemera*, or Diary Fever, which goes through the different Stages, as the Beginning, Increaſe, State, and Declenſion, in the Space of twenty-four Hours. It ariſes from a more vehement Motion only, excited by ſome Error with reſpect to the Non-naturals; and has ſcarcely any material Cauſe. It is diſtinguiſhed by the Slightneſs of the Cauſe; the Purity of the Body; the Mildneſs of the Symptoms; the expeditious Criſis; and a Reſtoration of the Pulſe to its natural State, immediately upon the Ceſſation of the Fever. The Cure is eaſily performed, by Abſtinence, Reſt, and Diluting.

If this Species of Fever continues many Days, it is called *A continual but not putrid Fever*. The Cauſes, Signs, and Cure are the ſame with thoſe of the *Ephemera*; but it requires particularly copious Bleeding, and refrigerating Medicines.

A Continual putrid Fever.

That Species of Fever, which is called a *putrid Synochus*, arises from Causes somewhat greater than a simple Inflammation; an Obstruction of the Viscera; an Oppilation of the Skin, and almost all the Capillaries; and a considerable Degree of Acrimony.

It is known by a Degree of Heat which is pungent to the Touch; a febrile, but unequal and irregular Pulse; Urine which is thick, red, and turbid, without a regular Sediment; and by an hot and sanguineous Temperament, Age, and Habit of the Patient.

This Fever is distinguished by the Name *Homotonos*, when it preserves the same Tenor through all its Stages, neither increasing, nor diminishing: When it perpetually increases, it is called *Epacmastica*, or *Anabatica:* But when it continues perpetually to decline, it acquires the Title of *Paracmastica*.

Of these the first Species is esteemed salutary; the second the worst; and the third better.

This Fever is esteemed the more dangerous and fatal, in *proportion as the Pulse is more weak, frequent, unequal with* respect to Strength, inordinate with respect to Time, and intermittent; as the Respiration is more difficult, frequent, and laborious; the more the *Pinnæ* of the Nostrils are agitated; the more Pain it excites about the vital Parts; and the more inordinate it is; the more vehemently a Sensation of Lassitude and Weakness, is perceived; the more frequently the Patient changes his Posture of lying, tosses about, and lies on his Back, with his Limbs extended; the more the rational Faculties, and Affections, are injured; the more the Appetite is impaired, the Digestion difficult, the Urine red, thick, and turbid, or pale, watery, discharged in small Quantities, and difficultly retained; the more tremulous Motions are perceived in the Patient; the more he starts from the Touch; the more he trifles and fumbles with his Hands; and the more he picks the Naps of the Bed-cloaths; the more ghastly his Eyes appear, and the more moist they are with involuntary Tears; for these are all very bad Symptoms.

But when Sleep is laborious and difficult, and affords no Relief; when purple or livid Eruptions appear on the Body; when the Hypochondria are tense and inflated, the Patient generally dies.

The Cure delivered above, is to be varied according to the Variety of Indications, the Violence of the Symptoms, the Condition of the Patient, and the Stage of the Fever; and, therefore, does not require to be particularly treated of.

The Antients called these Fevers Σύνοχοι, and the Schools, *Continentes*; because in them there is no Remission of Heat: But Continual Remittent Fevers, the Antients called Συνεχεῖς, in *Latin Continuæ*.

A Causus, or Ardent Fever.

Among these Fevers, we may justly reckon the *Causus*, or burning Fever, on account of its Frequency, Danger, and Difficulty of Cure.

The primary Symptoms of this Disorder, are an Heat almost burning to the Touch, unequal in different Parts of the Body, most intense in the vital Parts, (but more mild towards the Extremities which are some times cold) and rendering the Breath intensely hot, a Dryness in the whole Skin, Nostrils, Mouths, and Tongue; a dense, difficult, and quick Respiration; a dry, yellow, black, parched, and rough Tongue; an insatiable Thirst often suddenly removed; a Loathing of the Aliments, a Nausea and Vomiting; the greatest Anxiety, Inquietude, and Weariness; a gentle Cough, and a shrill Voice; a Delirium, Phrenitis, obstinate Watching, Coma, and Convulsions, and Exacerbations on the odd Days.

The Causes of a burning Fever may be excessive Labour; long Journeys; the Heat of the Sun; Thirst long endured; the Use of heating, fermented, aromatic, and acrid Substances; excessive Venery; and immoderate Weariness, especially in the Summer.

This is the Progress of this Disease: On the third and fourth Day it often proves mortal; and, if it is violent, rarely exceeds the seventh, without putting an End to the Patient's Life. It is frequently terminated by an Haemorrhage, (which, if it is sparing on the third or fourth Day, is a mortal Sign) which may be predicted by the Pain of the Neck, the Heaviness of the Temples, a Dissension of the Praecordia without a Sense of Pain, a spontaneous Discharge of Tears without any other mortal Sign, a Redness of the Face, an Itching of the Nostrils; and this Haemorrhage is most salutary on the critical Day. This Species of Fever is, also, terminated on the critical Day, by Vomit, Stool, Sweat, Urine, and the Expectoration of a thick Matter: If the Exacerbation of the Fit happens before the sixth Day, it is a very bad Symptom; black and thin Urine, discharged in a small Quantity, is, in this Disorder, a mortal Sign; as, also, a Spitting of Blood, and a Discharge of bloody Urine; an injured Deglutition is a bad Sign; and a Refrigeration of the Extremities, among the worst of Symptoms; a Redness and Sweating of the Face is, also, a bad Sign; and an Inflammation of the Parotid Glands, which does not come to Suppuration, proves mortal; an excessive Flux is, in this Disorder, also, mortal: This Species of Disorder, when accompanied with a Tremor, terminates in a Delirium, and then in Death; it, also, terminates in a Peripneumony, often accompanied with a Delirium: That Species of burning Fever, which arises after violent Gripes of the Belly, is of the worst Kind; it is critically terminated by a Rigor.

From these Signs the Disorder is easily known to be present, nor can its proximate Cause be mistaken; for it arises from the Blood's being deprived of its milder and more liquid Parts by an Inflammation through the Whole of the Body, whilst the Strength of the Patient is vigorous. Hence, also, sure Prognostics may be made with respect to the Termination of this Species of Fever.

The Cure of a burning Fever requires a pure cold Air frequently renewed; Cloaths, which by no means suffocate or burden the Patient; a frequent erect Posture of the Body; large Quantities of mild, demulcent, subacid, aqueous, and warm Liquors used as Drink; light farinacious Foods prepared of Barley, Oats, and subacid Fruits; Venesection, if the Disease is in the Beginning, if the Marks of a Plethora appear, if there are Signs of a considerable Inflammation, if the Heat is intolerable, the Rarefaction of the Fluids excessive, a Revulsion necessary, and the Symptoms so violent, that they cannot be easily removed by any other Remedy; the Injection of mild, diluting, laxative, antiphlogistic, and refrigerating Clysters to be repeated as the Heat, Costiveness, and Revulsion require; Humectation of the whole Body, by drawing into the Nostrils a mild Air, impregnated with the Steam of warm Water, by washing the Mouth and Throat, by bathing the Hands and Feet with tepid Water, and by fomenting, with warm Sponges, the Places where most Vessels are exposed to the Touch; aqueous, mild, nitrous, gratefully acid, and gently laxative Substances; together with such as supply the Matter of the Urine, and without any Acrimony, by their Quantity, afford a Vehicle for the Sweat; such as remove Contractions of the Fibres, resolve and dilute the Thickness of the Humours, and, at the same time, correct their Acrimony.

To these if we add what has been said in the general Rules relating to the Cure of acute Disorders, and their Symptoms, and the Doctrine of each particular acute Disease, arising from the Affection of each of the Viscera, to be found under their respective Articles, he shall clearly understand what Remedies are proper for the Cure of any burning Fever.

Besides, from what has been said, all other particular acute Fevers may be understood, since they may either be referred to particular Symptoms, or are the Effects of some other Disorder. See Causus.

Intermittent Fevers.

We have already given the Definition of an intermittent Fever, the Diagnostics of which are obvious, and its Distinction into various Classes easy, since these depend only on the Difference of Time.

But 'tis to be observed, that intermittent Fevers, in general, are either vernal, and rage from *February* till *August*; or autumnal, and rage from *August* till *February*; which Distinction is necessary on account of the various Conditions, Symptoms, Terminations, Durations, and Cures of different Intermittents: Besides, one Intermittent Fever sometimes removes another.

Intermittent Fevers, in the Beginning of the Autumn, often resemble those of the continual Kind, on account of their longer and redoubled Paroxysms, whereas their Nature and Cure are widely different.

Fevers of this Kind begin with an Oscitation, Pandiculation, Weariness, Weakness, Cold, Horror, Rigor, Tremor, and Paleness of the Extremities, a difficult Respiration, an Anxiety, a Nausea, a Vomiting, and a quick, weak, and slow Pulse. The more violent and numerous these Symptoms are, the worse the Fever is; and afterwards the Heat, and other Symptoms, are the worse. This is the first Stage of intermittent Fevers, which correspond to the Increase of continual Fevers, and is of all the other Stages the most dangerous; for, in this Condition, the Urine is generally crude and thin.

This Stage of intermittent Fevers is succeeded by another, which begins with Heat, Redness, a strong, large, and free Respiration, a small Anxiety, a large and strong Pulse, an excessive Thirst, and a Pain of the Limbs and Head, and generally a Redness of the Urine: This Stage corresponds to the State or Height of continual Fevers.

Then,

Then, laſt of all, there generally appears a profuſe Sweat, a Remiſſion of all the Symptoms, a thick Urine, with a Sediment reſembling Brick-duſt, Sleep, a total Abſence of the Fever, Laſſitude, and Weakneſs.

Intermittent Fevers frequently terminate in thoſe of the acute and dangerous Kind, which is generally owing to an exceſſive Heat, and too briſk a Motion of the Fluids.

Intermittent Fevers, running through their three different Stages, greatly injure the minute Fibres of the Veſſels and Viſcera, by producing Stagnations, Obſtructions, Coagulations, Impulſions, Reſolutions, and Attenuations of the Fluids: Hence the Veſſels are weakened, and the Fluids become morbid, eſpecially in that Species of the Diſeaſe, in which their Parts are leſs aſſimilated, and not duly mixed, by which Circumſtances in Conjunction, an acrimonious State of the Juices is produced. Hence all theſe things concurring produce an eaſy Propenſity to ſweat, which greatly weakens the Patient, ſince, ſometimes, the viſcid Part of the Blood tranſpires. In this Situation of the Patient, the Urine is ſurpriſingly thick, turbid, pinguious, like that of Horſes, or like Saliva. Hence the weak, reſolved, and hardly coherent Blood, being deprived of its beſt Parts, is at once acrid and thick; ſo that, in conſequence of the Laxity of the Veſſels, and the Acrimony of the Humours, thoſe long-continued Fevers ſometimes terminate in chronical Diſorders, ſuch as a Scurvy, a Dropſy, a Leucophlegmatia, ſcirrhous Tumors of the Abdomen, and the ſeveral Misfortunes produced by theſe.

But if intermittent Fevers are not of the malignant Kind, they diſpoſe the Patient to Longevity, and cleanſe the Body from inveterate Diſorders.

Hence, after an accurate Examination of the whole Hiſtory of Intermittents, their proximate Cauſe ſeems to be a Viſcidity of the arterial Blood upon the Acceſſion of any Cauſe which produces a briſk and ſtrong Contraction of the Heart, and a Reſolution of the ſtagnant Fluids.

Since, therefore, this Order is always obſerved in Intermittents, the Phyſician who can ſurmount the firſt Time, and the firſt Cauſe, may by that means remove the whole enſuing Paroxyſm.

Beſides, as an infinite Number of Cauſes, and theſe not very conſiderable, may produce the firſt Stage of a perfectly intermittent Fever, and its Cauſe; and as many ſuch Cauſes may be produced, increaſed, and fomented, in all the Fluids, formed and ſecreted in the human Body, it is more difficult to diſtinguiſh the Cauſe already formed from infinite poſſible Circumſtances, than to invent one poſſible Cauſe, ſufficient from the Laws of the animal Œconomy to account for the ſtated Periods of Intermittents. This is ſufficiently obvious to every accurate Inquirer.

The Cure, therefore, requires that we ſhould uſe aperient, ſaline, alcaline, aromatic, mineral, diluting, mild, and oleous Subſtances, Heat, Motion, Fomentation, and Friction, during the Intermiſſion, or in the firſt Stage. The Medicines of this Kind are all *Tachenius*'s Salts of Herbs, the moſt conſiderable of which, are obtained from Wormwood, Carduus Benedictus, and Stalks of Beans; Nitre; antimoniated Nitre; diaphoretic Antimony unwaſhed; Sal Ammoniac; Sal Prunellæ; and Sal Polychreſtus; Tartarus regeneratus; Tartarus Tartariſatus; Salt of Tartar reduced to a ſaponaceous Maſs with Oil of Turpentine; and all the Parts of all the aromatic Herbs, eſpecially of thoſe which are reſolvent.

In order to purge the *Primæ Viæ* from the redundant Sordes, a Purge, or a Vomit, are often very beneficial, exhibiting either ſo long before the Paroxyſm, that its Operation may be over before the Fit comes on. That this Method is to be taken, may be known from the Patient's way of living, preceding Diſeaſes and Symptoms, a Nauſea, a Vomiting, Eructations, Tumors, the Breath, the Sordes of the Tongue, Throat, and Palate, want of Appetite, Bitterneſs of the Mouth, and a Vertigo accompanied with Dimneſs of Sight; and, after the Operation, the tumultuous Commotion of the Fluids is to be allayed by an Opiate before the Paroxyſm. Thus,

Take of emetic Tartar, five Grains, reduced to a Powder; to be taken at one Doſe: Or,

Take of emetic Tartar, five Grains; and of the Crumbs of Bread, a ſufficient Quantity; to make five Pills, to be taken for one Doſe: Or,

Take of emetic Wine, two Ounces; and of Oxymel of Squills, ſix Drams: Mix up for a Draught: Or,

Take of emetic Tartar, five Grains; Rob of Currans, half an Ounce; and Oil of Cinnamon, one Drop: Make into a Bolus.

Forms of Purges, are theſe following:

Take of the Pulvis Cornachini, two Scruples for a Doſe: Or,

Take of the Pilulæ Cochiæ majores, two Scruples; of ſolutive Syrup of Roſes, half an Ounce; and of diſtilled Elder-flowers, two Ounces: Mix for a Draught: Or,

Take of waſhed Aloes, twelve Grains; of Myrrh, ten Grains; of Opopanax, five Grains; and of Sal Gemmæ, five Grains: Mix, and make up into nine Pills.

Theſe are beneficial, when, by their Stimulus, they operate both Ways.

But they prove injurious when they weaken, evacuate the moſt liquid Parts of the Juices, and diſturb the neceſſary Digeſtions; and thus either protract the Diſeaſe, or bring on Death. The cold and hot Fits are often removed by Sudorifics, whilſt a few Hours before the known time of the Paroxyſm, after filling the Patient's Body with an aperient, diluting, and gently narcotic Liquor, an Hour before the Paroxyſm, a Sweat is excited, and continued till two Hours after the Paroxyſm uſually began.

Take of Sal Polychreſtum, two Drams; of the Syrup of the Five aperient Roots, two Ounces; of pure Opium, two Grains; of the diſtilled fermented Waters of Carduus Benedictus, Wormwood, Rue, Marjoram, and Mint, each one Ounce; and of the Extract of Wormwood, two Ounces: Mix all together, and let the Patient take one Spoonful every Quarter of an Hour, drinking after each, four Ounces of the following Decoction:

Take of the Root of Maſterwort, ſix Drams; of the Roots of Saſafras, and red Saunders, each two Ounces; of the Leaves of Golden-rod, two Handfuls; of the Leaves of the Leſſer Centaury, half an Ounce; and of the bruiſed Seeds of Candy Carrot, ſix Drams: Infuſe for two Hours in a cloſe-ſtopt Veſſel, without boiling, though very hot; then let them boil a little, and exhibit two Pints of the Decoction for a Doſe.

Veneſection, conſidered in itſelf, is always pernicious, though it may prove accidentally beneficial, as, alſo, a light and exactly regulated Diet.

When intermittent Fevers are in the ſecond Stage, aqueous Subſtances actually warm, mixed with ſubacid ape[illegible], nitrous Ingredients, or Preparations of Succory, and other mild Subſtances of a ſimilar Nature, are indicated, whilſt the Patient is to be kept in a State of Reſt, and moderate Warmth. The Medicines before recommended in a febrile Anxiety and Thirſt are to be uſed in this Stage of Intermittents.

When the Paroxyſm is terminated by a Criſis, then it is expedient to ſupply the Matter of Sweat and Urine, by vinous Ptiſans, Broths prepared with Fleſh, and temperate Decoctions: Thus thoſe two Excretions are to be excited, not by the Force of Heat, Medicines, or Bed-cloaths; but gently promoted by an increaſed Quantity of their Materials long perſiſted in.

Violent Symptoms are to be removed by the Rules laid down for the Cure of febrile Symptoms in general.

When the Fever is removed, the Patient is to have his Strength reſtored by analeptic Aliments, and corroborating Medicines; then after his Strength is increaſed, he is to be purged ſeveral times.

But if an autumnal intermittent Fever is very violent; if the Patient is weakened by the Diſeaſe; if the Diſorder is of a conſiderable Standing; if there are no Signs of an internal Inflammation, nor of Pus collected any-where, nor of a conſiderable Obſtruction of any of the Viſcera, the Diſorder is to be removed by the *Peruvian* Bark, exhibited in the Form of a Powder, an Infuſion, an Extract, a Decoction, or a Syrup, with proper Specifics, during the Intermiſſion, in a due Order, a proper Doſe, and in Conjunction with a proper Regimen. For this Purpoſe,

Take of the *Peruvian* Bark, one Ounce; reduce to a Powder, to be divided into twelve Doſes; one of which is to be taken by the Patient every Hour in Wine: Or,

Take of *Peruvian* Bark, three Ounces; and common Water, twelve Ounces: Infuſe for two Hours; then boil for an Hour; and add four Ounces of *French* Wine; then let the Whole boil a little longer in a tall Veſſel; and of this Decoction, when pure, let the Patient take one Ounce and an half every two Hours: Or,

Take of the *Peruvian* Bark, three Ounces; boil for two Hours in a cloſe Veſſel in common Water to ſixteen Ounces of ſtrained Liquor, of which let the Patient take an Ounce and half every two Hours: Or,

Inſpiſſate the preceding Decoction to the Conſiſtence of Honey, and divide into four Doſes, one of which is to be taken every two Hours: Or,

Take the preceding Extract, dilute in one Ounce of the Syrup of the Five aperient Roots: Make a Syrup to be uſed in the ſame manner with the Extract: Or,

Take the preceding Extract; mix with it a ſufficient Quantity of the Powder of Liquorice, and reduce to a Maſs of Pills, of which the Patient is to take four Grains, during the time of Intermiſſion.

Epithems are, alſo, frequently beneficial, as, alſo, Unctions of the Spine of the Back, and the drinking aſtringent Liquors. Thus,

Take of the Oils of Scorpions, Caſtor, Juniper-berries, Camphire obtained from the Root of the Cinnamon-tree, Bays, and Turpentine, and of the terebinthinated Balſam of Sulphur, each half an Ounce: Mix for a Liniment.

Take of the Whole of the broad-leaved Plantain, ten Ounces; and of recent Tormentil-root, two Ounces: Boil in two Pints of Water; and let the Patient drink three Ounces of the Decoction every two Hours.

Take of Roch-alum, one Dram; of Nutmeg two Drams; and of the Powder of *Armenian* Bole, twelve Grains: Reduce to a Powder, to be taken an Hour before the Paroxyſm.

Epithems for the Wriſts may be prepared in the following manner:

Take of Currants, and Hops, each two Ounces; and reduce to a Poultice, to be applied to the Wriſts: Or,

Take of the Tops of green Rue, two Ounces; and of Muſtard-ſeeds, two Drams: Bruiſe, and apply to the Wriſts.

That the Cure of particular Intermittents may be underſtood, 'tis to be obſerved, firſt, that the ſhorter the Intervals of true Intermittents are, the ſooner they are cured; and the longer the Intervals are, the more Time is required to their Cure. Secondly, that, for this Reaſon, they approach much to the Nature of acute Fevers, and are ſometimes converted into them. Thirdly, that for this Reaſon, their Cauſe is more moveable, tho' more copious. Fourthly, that vernal Intermittents, upon the Approach of warm Weather, are ſpontaneouſly terminated. Fifthly, that autumnal Intermittents, on the Approach of cold Weather, are increaſed. Hence 'tis obvious what Fevers are curable, and by what Medicines. *Boerhaave Aph. & Mat. Med.* See ARANEA.

Sydenham, ſpeaking of the intermittent Fevers, which raged from the Year 1675, to 1680, obſerves, that though Quartans were more frequent formerly, yet now Tertians and Quotidians were moſt common, unleſs the latter may be intitled double Tertians; and, alſo, that though theſe Tertians ſometimes began with Chilneſs and Shivering, which were ſucceeded firſt by Heat, and ſoon after by Sweat, and ended at length in a perfect Intermiſſion, returning again after a fixed time; yet they did not keep this Order after the third or fourth Fit, eſpecially if the Patient was confined to his Bed, and uſed hot Cardiacs, which increaſe the Diſeaſe. But afterwards this Fever became ſo unuſually violent, that only a Remiſſion happened in place of an Intermiſſion; and approaching every Day nearer to the Species of continued Fevers, it ſeized the Head, and proved fatal to abundance of Perſons.

As to the Cure, I have learnt, ſays he, from the Experience of many Years, that 'tis dangerous to attempt to remove Tertians and Quotidians by Sudorifics; for when they are recent, and have aſſumed no certain Shape, they nearly approach to continued Fevers. And though it is well known, that as ſoon as the Sweat flows, the Reſtleſneſs, and other Symptoms, preſently go off, and a perfect Intermiſſion ſucceeds, and conſequently that it ſhould be ſomewhat promoted, or, at leaſt, not hindered, when the Fit is going off; yet 'tis manifeſt, that, if Sweat be forced beyond the due Degree, the Intermittent becomes a continued Fever, and Life is endangered. I conceive the Reaſon of this to be, that ſo profuſe a Sweat, (ſince it exceeds the Degree of the febrile Matter, already ſo exalted by the Heat of the Fit, that it may now be expelled by Deſpumation) after it has expelled that Part thereof, which might produce a ſingle Fit, proceeds to inflame the Blood. Upon conſidering, therefore, the Ineffiacy of this Method, and the Inconveniencies attending other Evacuations, as Bleeding and Purging, both which, by weakening the Texture of the Blood, prolong the Diſeaſe, the *Peruvian* Bark afforded me the ſureſt Hopes; of which I can truly affirm, notwithſtanding the Prejudice of the Vulgar, and a few of the Learned, that I never found, or could reaſonably ſuſpect, any ill Conſequence follow its Uſe; unleſs, that ſuch as have taken it for a conſiderable time, are ſometimes ſeized with a ſcorbutic Rheumatiſm. But this Diſorder rarely proceeds from this Cauſe, and when it does, readily yields to the Remedies adapted to it.

And, in reality, if I were as certain of the Continuance of its Effects, as I am of the Innocence of the Bark, I ſhould not ſcruple to prefer it to all the Medicines hitherto known; ſince it is not only excellent in this Diſeaſe, but, alſo, in thoſe of the Uterus and Stomach: So little Reaſon there is to complain of its Unwholſomeneſs.

But, I conceive, that the Bark has been ill ſpoken of, principally, for the following Reaſons: (1.) Becauſe the numerous Train of violent Symptoms, which accompany, previouſly to the Uſe of the Bark, inveterate Intermittents, are aſcribed to it, though it has been taken only once. (2.) As it cures the Diſeaſe by a ſecret Virtue, and not by any ſenſible Evacuation, ſeveral Perſons maintain, that the morbific Matter, which ought to have been expelled, is retained in the Body by its Aſtringency, ready to occaſion freſh Diſturbance, the Diſeaſe not being entirely carried off. But ſuch Perſons do not ſufficiently conſider, that the Sweats, happening at the Decline of the Fit, have expelled all the morbific Matter that was collected during the preceding Interval, ſo that only the Seeds of the Diſeaſe remain, which require time to be ripened; and the Bark, by cloſely purſuing the retiring Fit, and cutting off the Supplies of the Diſeaſe, cannot be a means of retaining any morbific Matter in the Blood, which is now exiſtent there only in Embryo; conſequently the Bark is not to be eſteemed productive of thoſe Obſtructions, which are commonly judged to proceed from its Uſe.

But how does it appear, that the Bark cures Intermittents by its Aſtringency? In order to prove this, other Aſtringents, poſſeſſed of the ſame Virtue, muſt firſt neceſſarily be produced: I have tried the ſtrongeſt ineffectually. Beſides, the Bark effects a Cure, even where it purges, which is ſometimes the Caſe. Upon the Whole, therefore, they act the wiſeſt Part, who limit their Inquiries to their Abilities. But, if a Perſon, impoſing upon himſelf, ſhould imagine, that he is poſſeſſed of other Faculties than ſuch as are uſeful, either to Natural Religion, by which we learn that GOD, the Creator and Governor of all things, is to be worſhipped with profound Veneration, as he juſtly merits; or to moral Philoſophy, that he may practiſe Virtue, and render himſelf every way uſeful to Society; or, laſtly, to the Medicinal, Mathematical, and Mechanical Arts, which ſupply Mankind with many Helps and Conveniencies; I would have him in the firſt place, deduce an Hypotheſis from Natural Philoſophy, that may enable him to explain the Cauſe of but a ſingle ſpecific Difference of Things in Nature. For Inſtance, let him account for the univerſal Greenneſs of Graſs, and why it is never found of any other Colour, and the like. And if he can do this, I will readily embrace his Sentiments; but, if not, I ſhall not ſcruple to affirm, that all the Diligence and Caution of a Phyſician ſhould be employ'd in inveſtigating the Hiſtory of Diſeaſes, and applying thoſe Remedies which ſtand recommended by Experience for the Cure thereof; obſerving, notwithſtanding, that Method which is founded on right Reaſon, and not the Reſult of idle Speculations. I will, therefore, briefly deliver what Experience hath taught me, relating to the Method of exhibiting the Bark.

The *Peruvian* Bark, commonly called the *Jeſuits Powder*, to the beſt of my Remembrance, began to be eſteemed at *London*, for the Cure of Intermittents, and eſpecially Quartans, about twenty-five Years ſince; and, indeed, very deſervedly, as theſe Diſeaſes before this time were ſeldom cured by any other Method, or Medicine; whence they were reputed the *Opprobria Medicorum*, and not without Cauſe. But, not long after, it loſt its Character, and was entirely diſuſed, for two conſiderable Reaſons: (1.) Becauſe, being exhibited only a few Hours before the coming of the Fit, according to the received Cuſtom of that Time, it ſometimes deſtroyed the Patient; which I remember happened to Mr. *Underwood*, a Citizen and Alderman of *London*, and to one *Potter*, an Apothecary in *Black Fryars*. This fatal Effect of the Powder, though very rare, did, however, deſervedly prevail with the more prudent Phyſicians to refrain from its Uſe. (2.) Becauſe, tho' the Patient was, for the moſt part, freed from the Fit, that would otherwiſe have come, by this Medicine, yet a Relapſe commonly happened within a Fortnight, particularly when the Diſeaſe was recent, and had not been weakened by a long Continuance. Theſe Reaſons weigh'd ſo much with the Generality, that they loſt all Hopes they had hitherto conceived of this Medicine; nor did they eſteem it ſo material to prevent the Acceſs of a Fit for a few Days, as, upon this account, to endanger their Lives by taking the Bark.

But, having ſome Years ſince throughly conſidered the extraordinary Virtues of the Bark, I was firmly perſuaded, that Intermittents

termittents could not be better cured than by this efficacious Medicine, provided it were given with proper Caution. For this Reaſon I ſpent much time in conſidering how I might prevent the Danger enſuing from its Uſe, and the Relapſe that ſucceeded in a few Days, which were the two Inconveniencies to be remedied, and by means thereof, to reſtore the Patient to perfect Health.

1. I conceived, that the Danger proceeded leſs from the Bark itſelf, than from the unſeaſonable Uſe thereof; for when a large Quantity of febrile Matter is collected in the Body upon the intermediate Days, the Bark, if taken immediately before the Fit, obſtructs the Expulſion of the morbific Matter in the natural way (that is by the Violence of the Fit); which, being preternaturally detained, uſually endangers Life. But I judged I could remedy this Evil, and, alſo, prevent the freſh Generation of febrile Matter, by giving the Powder directly upon the Departure of the Fit, ſo that a Stop might be put to the ſucceeding one; and by repeating it upon the intermediate Days, at proper Diſtances, till the Approach of a new Fit; and that by this means the Blood might be impregnated gradually, and conſequently ſafely, with the Virtue of the Bark.

2. As the Relapſe, which generally happened in a Fortnight, ſeemed to me to proceed from not ſufficiently impregnating the Blood with the Virtue of the Febrifuge, which, however efficacious, was not powerful enough to cure the Diſeaſe at once, I judged, that the beſt Method of preventing a Relapſe, would be to repeat the Powder, at proper Intervals, before the Virtue of the preceding Doſe was quite ſpent, even though the Intermittent appeared to be conquered for the preſent.

Theſe Conſiderations led me to the following Method, which I now uſe. When I am called to a Perſon afflicted with a Quartan, ſuppoſe on a *Monday*, if the Fit is expected the ſame Day, I refrain from doing any thing, and only give the Patient Hopes, that he ſhall be freed from the next Fit. And, in order to effect this, I exhibit the Bark upon the two intermediate, or well Days, that is, *Tueſday* and *Wedneſday*, in the following manner:

Take of *Peruvian* Bark, very finely powdered, one Ounce; Syrup of Cloves, or of dried Roſes, enough to make it into an Electuary, to be divided into twelve Doſes; whereof let the Patient take one every fourth Hour, beginning immediately after the Fit is gone off, and drinking, after each Doſe, a Draught of any Kind of Wine.

Or, if Pills be more agreeable,

Take of the *Peruvian* Bark, very finely pulverized, one Ounce; Syrup of Cloves, enough to make it into Pills of a middling Size; of which let the Patient take ſix every fourth Hour.

But an Ounce of the Powder may be mixed with a Quart of Claret, with leſs Trouble, and equal Succeſs, and eight or nine Spoonfuls of it may be given at the Intervals above-mentioned. I order nothing on *Thurſday*, when the Fit is expected, becauſe, for the moſt part, it does not come, the Remainder of the febrile Matter being deſpumated and expelled the Blood by the uſual Sweats, which terminated the preceding Fit, and a Collection of freſh Matter being prevented by the Repetition of the Powder upon the intermediate Days.

But, in order to prevent a Relapſe, which was one of the Inconveniencies above recited, I always gave the ſame Quantity of the Powder, an Ounce divided into twelve Doſes, upon the eighth Day preciſely, after taking the laſt Doſe. But though a ſingle Repetition of the Bark in this manner frequently removes the Diſeaſe, yet the Danger is not over, unleſs the Patient will comply with the Directions of his Phyſician, and take it thus a third or fourth time; eſpecially when the Blood has been impoveriſhed by ſome preceding Evacuation, or the Body unadviſedly expoſed to the cold Air.

Now, though there is no inherent purgative Virtue in this Medicine, yet a violent Purging is frequently occaſioned thereby, on account of ſome peculiar Idioſyncraſy in the Conſtitution. In this Caſe, it is indiſpenſably neceſſary to exhibit Laudanum therewith, to prevent its having this Effect, which is manifeſtly as oppoſite to its own Nature, as it is to this Diſeaſe, and that it may be retained long enough to anſwer its End. Therefore I direct ten Drops of Laudanum to be given in a little Wine, after every other Doſe of the Powder, provided the Purging does not go off.

I follow the ſame Method in other Intermittents, whether Tertians or Quartans; for, immediately upon the Fit's going off, I adminiſter a Doſe of the Powder, and repeat it in point of Frequency, at as cloſe Intervals, during the time of the Intermiſſion, as the Nature of the Diſeaſe will admit; but with this Difference, that a Tertian may be ſo far conquered with ſix Drams of the Bark, as at leaſt to give a Reſpite; whereas a Quartan can very rarely be removed with leſs than an Ounce of it, divided into proper Doſes.

But tho' Tertians and Quotidians, after a Fit or two, may ſeem entirely to intermit, yet, as I have before obſerved, they afterwards frequently degenerate into a Species of continued Fevers, and only come to a Remiſſion even upon thoſe Days that promiſed an Intermiſſion; eſpecially when the Patient has been kept too warm in Bed, or been tormented with Medicines to carry off the Intermittent by Sweat. In this Caſe, I have no other way left, but to take Advantage of the Remiſſion, though it be ever ſo ſmall; and accordingly, I give the Powder immediately after the Fit is gone off, as near as I can conjecture, and repeat it every four Hours, as above-mentioned, without waiting for a regular Intermiſſion, becauſe otherwiſe the alexiterial Virtue of the Bark cannot be communicated to the Blood in ſo ſhort an Interval.

And though the preſent reigning Intermittents, after the ſecond or third Fit, incline to continued Fevers, yet they muſt be referred to the intermittent Kind; *and, therefore,* I ſcruple not to order the Bark, even in the moſt continued of this Species; the Repetition of which, in the above-mentioned manner, will certainly remove the Diſeaſe, provided the conſtant Warmth of the Bed, and the improper Uſe of Cardiacs, have not rendered it a continued Fever; in which Caſe, I have frequently obſerved, that the Bark proves ineffectual. Nor have I ever found, that the Wine, wherein the Bark is adminiſtred, did the Patient Harm, which might reaſonably be ſuſpected; but, on the contrary, the Heat, Thirſt, and other febrile Symptoms, generally went off ſoon after taking a ſufficient Quantity of this Medicine. But it muſt be here obſerved, that the nearer the Intermittent approaches to a continued Fever, either ſpontaneouſly, or from uſing too hot a Regimen, ſo much the more neceſſary it is to exhibit a larger Quantity of the Bark; for I have ſometimes found, that Intermittents would not yield to leſs than an Ounce and an half, or two Ounces, of the Bark.

As ſome Perſons can neither take the Bark in Powder, an Electuary, or in Pills, I give them an Infuſion of it, which is made with two Ounces of Bark groſly powdered, infuſed cold for ſome time in a Quart of *Rheniſh* Wine. This Infuſion, being ſeveral times paſſed through a fine Strainer, becomes ſo clear, as not to be nauſeated by the niceſt Palate. Four Ounces of this Infuſion, after it has ſtood ſome Days, ſhould ſeem equivalent in Virtue to a Dram of the Powder in Subſtance; and, as it is neither diſagreeable, nor lies heavy upon the Stomach, it may be exhibited with twice the Frequency of the other Formulæ, till the Diſeaſe vaniſhes.

When this Diſeaſe hath aſſumed no regular Appearance, it is ſometimes attended with an almoſt continual Vomiting, ſo that the Bark cannot be retained in any Form; in which Caſe the Vomiting muſt be ſtopt, before it can be adminiſtred. For this Purpoſe I order a Scruple of Salt of Wormwood to be diſſolved in a Spoonful of freſh Lemon-juice, and taken ſix or eight times in the Space of two Hours; and afterwards I give ſixteen Drops of Liquid Laudanum in a Spoonful of ſtrong Cinnamon-water; and ſoon after, if the Vomiting ſtops, I proceed to uſe the Bark.

For Children, who, on account of their tender Age, can ſcarcely bear to take this Remedy in any other Form, at leaſt in a ſuitable Quantity to effect a Cure, I generally preſcribed the following Julap:

Take of black Cherry-water, and *Rheniſh* Wine, each two Ounces; *Peruvian* Bark finely powdered, three Drams; Syrup of Cloves, an Ounce: Mix them together for a Julap. Let a Spoonful or two (according to his Age) be given to the Child every fourth Hour, till the Fits return no more, dropping into every other Doſe, in caſe of a Looſeneſs, one or two Drops of Liquid Laudanum.

It muſt be further obſerved, that the Intervals between the Fits in Tertians and Quotidians are ſo ſhort, that they do not allow ſufficient time to impregnate the Blood perfectly with the febrifuge Virtue of the Bark; ſo that 'tis not to be ſuppoſed, that the Patient ſhould ſo certainly miſs the next Fit after the firſt time of taking it, as it commonly happens in a Quartan; for the Medicine, in theſe Caſes, will frequently not effect the Cure in leſs than two Days.

It muſt, alſo, be remark'd, that if the Patient, notwithſtanding the Obſervance of the Cautions above delivered, ſhould relapſe, which happens leſs frequently in a Quartan than in Tertians and Quotidians, it will become a prudent Phyſician not to adhere too cloſely to the Method of giving the Bark at the above-mentioned Intervals; but to attempt the Cure, as his Judgment ſhall direct, by ſome other Procedure: And here the bitter Decoction is generally eſteemed of moſt powerful Efficacy.

With

With reſpect to Diet and Regimen, the Patient muſt be allowed the Uſe of all Kinds of ſolid and liquid Aliment that agree with his Stomach, Fruit and cold Liquors always excepted; becauſe they impoveriſh the Maſs of Blood, and are very ſubject to occaſion a Relapſe. Let the Diet, therefore, be Fleſh of eaſy Digeſtion; and a moderate Uſe of Wine may be permitted for common Drink; by the ſole Uſe whereof I have ſometimes recovered ſuch as have been ſo debilitated by the frequent Return of the Intermittent, that the Bark proved ineffectual to their Cure. The Patient, alſo, muſt not unadviſedly expoſe himſelf to the cold Air, till the Blood has recovered its former healthy State.

It muſt here ber emark'd, that tho', in treating of Intermittents heretofore, we recommended due purging after the Diſeaſe was gone off, yet this practical Caution is only to be underſtood of ſuch Intermittents as either went off ſpontaneouſly, or were cured without the Aſſiſtance of the Bark: For when the Cure is effected by this Medicine, Cathartics are unneceſſary and injurious; ſo powerfully does the Bark, alone, reſiſt the Fits, and the Indiſpoſition they occaſion. Hence, therefore, all Kinds *of Evacuations muſt be refrained from; for the gentleſt Purge*, even a Clyſter of Milk and Sugar, will certainly endanger a Relapſe, and, perhaps, reproduce the Diſeaſe.

And here it is proper to mention, that a very remarkable Symptom ſometimes ſucceeded theſe Intermittents in the firſt Years of this Conſtitution: For the Fits did not begin with Chilneſs and Shivering, which were ſucceeded by a Fever; but the Patient was ſeized with the Symptoms of a true Apoplexy; though, in Reality, how nearly ſoever it reſembled this Diſeaſe, it was nothing more than the Effect of the Fever's ſeizing the Head; as plainly appeared from other Signs, as well as the Colour of the Urine, which in Intermittents is uſually of a deep red, though not ſo red as in the Jaundice, and, alſo, lets fall a lateritious Sediment. But though in this Caſe all Kinds of Evacuation ſeem to be indicated, in order to make a Revulſion of the Humours from the Head, as is generally practiſed in the genuine Apoplexy, yet they are to be wholly refrained from, becauſe they are very prejudicial in the Intermittents, whence this Symptom originally proceeds, and, conſequently, endanger Life, as I have obſerved. On the contrary, therefore, we muſt wait till the Fit goes off ſpontaneouſly, when the Bark, in caſe it could not be given ſooner, muſt immediately be exhibited, and repeated with ſufficient Frequency in the Intervals, till the Patient be perfectly recovered.

And theſe are the Obſervations I had to communicate, in a ſummary way, concerning the Uſe of the Bark; for my Deſign was not to conſult the Pomp of Medicine: And, in reality, they who add any thing more to the Bark than a Vehicle, which is neceſſary to carry it into the Stomach, in my Opinion either do it ignorantly, or fraudulently; which every good Man muſt deteſt, who, as a Part of the Whole, would not be induced to commit ſuch a Fraud, for his private Advantage. As to what remains, if my Contemporaries had pleaſed to have conſidered what I publiſhed in my Hiſtory of acute Diſeaſes, (which, it is highly probable, I was acquainted with before that time) relating to the Method of exhibiting the Bark in the Intervals of the Fits, and the ſucceeding Repetition of it when the Diſeaſe was gone off, perhaps the Lives of many Perſons had been ſaved; how much ſoever ſome Men contemned my ſlender Endeavours for the public Good, and ſlighted the Cautions there delivered in the following Words; which contain, in a conciſe manner, what I have here judged proper to enlarge upon.

1. "Great Caution muſt be had not to give this Bark too "early, that is, before the Diſeaſe be in ſome meaſure ſpon"taneouſly abated; unleſs the extreme Weakneſs of the Pa"tient requires it to be given ſooner: For the giving it too "ſoon may render it ineffectual, and even fatal, if a ſudden "Stop ſhould be thus put to the vigorous Fermentation raiſed "in the Blood, in order to its Deſpumation. 2. We muſt not "direct Purging, much leſs Bleeding, in order to carry off a "Part of the febrile Matter, and render the Bark more effe"ctual; for they both weaken the Tone of the Parts, whence "the Diſeaſe returns ſo much the more expeditiouſly and cer"tainly, after the Virtue of the Bark is ſpent. It were better, "in my Opinion, to impregnate the Blood with this Medicine "by Degrees, and at diſtant Intervals from the Fit, rather than "endeavour to ſtop it at once, juſt upon its coming; for by "this means the Bark has more time to produce its full Effect "in; and, beſides, the Miſchief is avoided that might happen "by putting a ſudden and unſeaſonable Stop to the Fit juſt "approaching. 3. The Bark muſt be repeated at ſhort Inter"vals, that the Virtue of the former Doſe may not be entirely "gone off, before another be given; and by repeating it fre"quently the Diſeaſe will, at length, be perfectly cur'd. For "theſe Reaſons, I prefer the following Method of giving the "Bark to all others.

"Take of the *Peruvian* Bark, one Ounce; Conſerve of "Roſes, two Ounces: Make an Electuary thereof. Take "the Quantity of a large Nutmeg, every Morning and "Night, on the intermediate or well Days, till the whole "be taken; and let it be repeated thrice, interpoſing a "Fortnight between each time."

But though the Bark is the beſt Medicine hitherto diſcover'd, for the Cure of theſe Diſeaſes; yet I have known Vernal Tertians, in Perſons in the Prime of Life, and of a ſanguine Conſtitution, yield to the Uſe of the following Remedies: For Inſtance, Bleed in the Arm upon the intermediate Day; and ſome Hours afterwards, upon the ſame Day, give an Emetic of the Infuſion of *Crocus Metallorum*, regulating the time in ſuch manner, that its Operation may be over before the Fit comes on; and as ſoon as it is gone off, let the following Electuary be given.

Take of the Extract of Wormwood, Gentian, and the leſſer Centaury, each two Drams: Mix them together, and *divide the Whole into nine Doſes. Of which, let one be* taken every fourth Hour; drinking, after each Doſe, of the bitter Decoction without Purgatives, and of White-wine, each three Ounces.

There is another Method of curing theſe Tertians in Perſons of low Circumſtances, who are unable to be at the Expence of a long Courſe of Medicines, in order to their Cure. As,

Take of *Virginian* Snakeweed, in fine Powder, a Scruple; White-wine, three Ounces: Mix them together. Let the Patient take it two Hours before the Fit comes on; and, being well covered with Cloaths, let him ſweat three or four Hours afterwards; and let it be repeated twice in the ſame manner.

In the following Year 1679. theſe Intermittents re-appeared at the Beginning of *July*, and, increaſing every Day, proved very violent and deſtructive in *Auguſt*: But, having already treated of theſe at large, I ſhall only obſerve, that they gave way to a new Epidemic, which proceeded from the manifeſt Qualities of the Air in *November*. *Sydenham*.

Of the Salubrity of Fevers.

Such is often the wiſe and admirable Oeconomy of Nature, that what at firſt Sight appeared noxious and prejudicial, tends to promote and advance the Happineſs and Health of Mankind. In no Inſtance is this Doctrine more remarkably verified, than in Fevers, ſince the febrile Commotions of the Blood, which accompany many Diſorders, both of the chronical and acute Kind, are of ſuch a Nature, as to baniſh and extinguiſh morbific Cauſes; and, conſequently, they muſt be rather beneficial than detrimental to the human Body.

Before we proceed to the Confirmation of this Aſſertion, we ſhall obſerve, that this Doctrine is ſupported by the Authorities of the Antients. Thus the divine *Hippocrates*, in his Writings, often affirms, that a ſupervening Fever cures ſome Diſorders, to be afterwards mentioned: And *Celſus*, *in Lib.* 2. *Cap.* 8. tells us, *that a Fever itſelf, which to ſome may ſeem ſtrange, often proves ſalutary*: For a Fever allays Pains of the Præcordia, if not attended with an Inflammation, mitigates Pain, and, ſucceeding Convulſions of the Nerves, and a Rigor, totally removes them. It, alſo, relieves the Diſeaſe of the ſmall Inteſtines ariſing from a Difficulty of Urine, if by the Heat it promotes a Diſcharge of it: Beſides, a Fever was by the ſagacious Antients defined the Struggle, Motion, or Conteſt of Nature; againſt the morbific Cauſe and Force of the Diſorder; by which they intended to inſinuate, that it was rather of a ſalutary, than of a noxious Nature: For that which fights againſt the Enemy of Life, which is the morbific Cauſe, cannot, in its own Nature, be pernicious. Hence *Linden*, *in Selectis Medicis*, cannot ſufficiently wonder, that, notwithſtanding the many Inſtances of this, in the Writings of *Hippocrates*, ſome ſhould yet aſcribe this Doctrine to *Campanella*, and damn it as a Novelty invented by a Man who was no Phyſician: For that Author, in *Tr. de Senſu Rerum*, *Lib.* 7. *Cap.* 2. affirms, that no Fever is a Diſeaſe, but a Remedy againſt other Diſeaſes. This Opinion is, alſo, eſpouſed by *Joh. de Meg*, *in Comment. Philoſ. Cap.* 5. *Loc.* 5. and the celebrated *Sydenham* is at a great deal of Pains to prove, that a Fever is the Effort or Inſtrument of Nature, by which the pure are ſeparated from the impure Parts, and the morbific Cauſe exterminated and expelled.

Hence the Reaſon is obvious, why *Hippocrates*, in *Epidem. Lib.* 2. informs us, that it is the Office of a prudent Phyſician, ſometimes, to excite Fevers: Beſides, nothing more confirms this Doctrine, than the univerſal Agreement of the Antients in this, that Nature was the beſt Phyſician; cured beſt; terminated

hated Diſorders moſt happily; and, as *Galen* expreſſes it, made a violent Inſurrection againſt the morbific Cauſe; ſtrongly attempted Criſes and Excretions; and at laſt, by Concoction and Evacuation, freed from mortal Diſorders: For the Struggle or Effort of Nature againſt the morbific Cauſe, is nothing but a Fever. Hence we juſtly conclude, that a Fever is the Inſtrument by which Nature preſerves the human Body, oppoſes morbific Cauſes, and, by expelling them, reſtores Health.

All Phyſicians, both antient and modern, have accounted a Fever a Diſeaſe in a certain Senſe; and *Hippocrates*, *in Lib. de Flatibus*, *Sect.* 3. calls a Fever a common Diſeaſe, which accompanies other Diſorders, and eſpecially an Inflammation: For a Fever is a preternatural Commotion of the Blood and Humours, which not only injures and weakens the Functions of the Body and Mind, but, alſo, proves mortal: For few are taken off without a Fever. But this does not hinder it from being, in other reſpects, the Remedy not only of its own Cauſe, but, alſo, of other Diſorders: So that we cannot ſufficiently admire the ſtupendous Skill of the adorable Architect, who has ſo artfully contrived the human Structure, that by its Force and Strength it *cannot only defend itſelf from* impending Injuries, but, the Commotions or Effects of the morbific Cauſe are of ſuch a Nature, that, if all other Circumſtances are equal, they are, alſo, ſufficient for removing themſelves, and the Diſorder. But that this Doctrine may be the better comprehended, we ſhall inquire into the Nature and Eſſence of a Fever, examine how it is created by Nature, and determine what Fevers produce ſuch ſalutary Effects, at what Time, in what Diſeaſes, and under what Circumſtances, ſuch laudable Conſequences may be expected.

How common a Fever is, how often it accompanies moſt other Diſorders, and how much the Knowledge of it has hitherto been involved in Perplexities and Obſcurities, is ſufficiently known; for almoſt all the celebrated Writers embrace different Opinions and Hypotheſes, with reſpect to Fevers: But, without enumerating them, we ſhall only obſerve here, that as Health and Life depend on the due Motion of the animal Spirits, and Circulation of the Blood, ſo the Origin and Cauſes of all internal Diſorders ought to be deduced and explained from ſome preternatural Circumſtance in theſe Fluids. Hence we define a Fever, a too briſk Motion of the Muſcles, eſpecially of the Heart, accompanied with an unequal Circulation of the Blood, a Change of the Excretions, of the natural Heat, Pulſe, and remitting or intermitting at certain Times.

A Fever is, therefore, a ſtrong and increaſed Motion of the muſcular Syſtem. Motion, by the Conſent of the greateſt Phyſicians, is performed in the human Body by means of an highly ſubtil and fluid Subſtance, by ſome called the animal Spirits, and by others the vital Principle, which exiſts originally in the Semen, is contained in the Blood, and afterwards ſupported by the external Air, and ſpirituous Aliments. This Subſtance was by the Antients called *Nature*, the *Anima purpurea*, and the *Calidum innatum*; and is the Cauſe not only of inteſtine, but, alſo, of circular Motion; moves all the Limbs, and is the genuine Inſtrument of Senſation and Reaſoning. This Subſtance is capable of having its Motion augmented and accelerated in the Nerves, and muſcular Fibres; as evidently appears in Spaſms of the Skin, and internal Parts, and during an increaſed and more frequent Action of the Heart, accompanied with preternatural Heat. We, therefore, affirm, with *Helmont*, *in Lib. de Febribus*, *Cap.* 1. that the febrile Heat is not proper to the peccant Matter, or the Effect of it; but that it is the Effect of the animal Spirits acting too violently, which, as in a ſound State, they are the Source of natural Heat, ſo they are, alſo, the immediate, primary, and efficient Cauſe of a febrile Heat. But I differ from *Helmont* in this, that he ſays the material Cauſe of a Fever is only occaſional, and free from a material phyſical Influence and Concurrence, to the Production of a Fever; but that it affords an Occaſion or Opportunity to the intelligent *Archæus*, or Nature, which, in the ſame manner as when an Object of Anger is externally preſented, by her proper Force and Energy, rouſes herſelf, attacks the Enemy, and endeavours to expel him. But I cannot deny, that the morbific Cauſe has a certain Power of Action and Motion, which, by acting inordinately on the animal Spirits, or vital Principle, by a certain mechanical Neceſſity, excites that impetuous Motion obſervable in the Heart, Arteries, and Muſcles: For the febrile or morbid Motion is produced by the Action and Reaction of the active morbific Matter, and the moving vital Principle in the human Body; in which Senſe it may be admitted, that Nature, or *Archæus*, is the Author of Fevers.

But we muſt determine by what means the febrile Matter acts on the animal Spirits in the Nerves and Membranes; what ſort of Effect or Reaction ſucceeds this Operation, and how the Symptoms, common to Fevers, are produced. Now we aſſert, that all Motion of the muſcular Fibres is active, ſyſtaltic, or contractory: Hence ſuch a Motion muſt be rendered preternatural, either by Intenſion, or Relaxation, of the Fibres. The Intenſion is generally called a Spaſm, which is a preternaturally ſtrong and long-continued Contraction of the muſcular Fibres. Such Spaſms conſtitute the firſt and fundamental Cauſe of all preternatural Diſorders, and morbid Commotions, and produce many and various Effects; ſince there is hardly any Diſeaſe without Spaſms: Theſe happen more eſpecially in Fevers, and the Generation of exceſſive Heat, where Spaſms are the Cauſe of the unequal Circulation of the Blood; the irregular and increaſed Pulſe, and the other Symptoms: For as when the Tone of the Muſcles, and Pulſation of the Heart, are moderate, and in due Proportion, the Fluids circulate regularly, the excrementitious Parts are ſecreted and eliminated, and ſuch Subſtances, as are ſubſervient to Life and Health, are retain'd, ſo, on the contrary, as ſoon as the Tone of the Muſcles is vitiated, or as ſoon as a Spaſm happens, and the Motion of the Heart becomes inordinate, the whole Order of the vital Motions, and the Oeconomy of the Secretions and Excretions, are diſturbed and perverted.

The evident Signs and Effects of ſpaſmodic Contractions of the muſcular Fibres and Membranes, which in the Beginning of Intermittents appear evidently, but in a more languid manner in the Remiſſion of continual Fevers, are various, according to the Diverſity of Patients and Fevers. The following Symptoms, eſpecially in the Beginnings of theſe Diſorders, appear: The Skin, which is highly ſenſible, and the Organ of Touch, is much conſtricted, the lax Pores contracted, and the Skin raiſed into Tubercles, like that of a Gooſe: The Veſſels, which were before tumid, and full of Blood, ſubſide and diſappear; the natural Redneſs is converted into a livid Colour; the turgid State of the whole Body ſubſides; there is a violent Horripilation, Rigor, and Refrigeration, eſpecially of the Extremities; the Skin, which was before moiſt, becomes dry and parched; and the Sweat is ſuppreſſed. But this Compreſſion and Conſtriction of the Fibres and Veſſels is not only found on the Surface of the Body, but, alſo, in the internal Parts; as is obvious, about this time eſpecially, in ſlow and continual Fevers, from the copious Diſcharge of aqueous limpid Urine, an obſtinate Coſtiveneſs, a Retention of the Flatulencies, the Impoſſibility of injecting Clyſters, the Anxiety of the Præcordia, the Nauſea, and Diſpoſition to vomit, and the intenſe Pain about the ſpinal Marrow, and Region of the Loins; all which Symptoms ſufficiently evince, that not only the Stomach and Inteſtines, but, alſo, the Kidneys, and hepatic Veſſels, are ſpaſmodically conſtricted. Nor is the Subſtance of the Heart, Arteries, and Muſcles, free from ſuch Spaſms, which, being rooted in the Spirits, by Conſent affect the whole Body; as is evident, from the ſmall, frequent, hard, and weak Pulſe, ariſing from an inſufficient and leſs free Influx of the Spirits. All theſe Symptoms differ not only in Degree, but, alſo, with reſpect to the Time of their Acceſſion; ſince in Intermittents they appear in the Beginning, whereas, in thoſe of the continual Kind, they appear in the Height and Decline of the Diſorder, without obſerving Time, Tenor, or Proportion. And, certainly, there is no Fever with which the ſkilful Phyſician will not obſerve ſuch Symptoms complicated. Theſe Things were diligently obſerved by *Helmont*, who, *in Lib. de Febr. Cap.* 9. gives us the following remarkable Obſervations: The Part in which the febrile Matter is lodged, is firſt corrugated, which is eaſily perceptible in the Præcordia; in the affected Part all the Veins are diſorder'd and conſtricted, by a Contraction of their oblique Fibres: Hence ariſes a rare, hard, and ſmall Pulſe, at once the Sign and the Cauſe of the cold Fit. This corrugating Stricture of the Veins will be eaſily perceived by every feveriſh Perſon, if he carefully adverts to his own Condition; and even a ſound Perſon, by careful Attention, may be ſenſible of the natural State of the Veins: For when the Scrotum is lax, and hanging down, it is ſpontaneouſly corrugated, when the Excrements arrive at the Sphincter of the Anus. It is, therefore, natural for the Veins, and Parts primarily affected, to corrugate themſelves; and as almoſt all Veins have correſponding Arteries, theſe muſt, alſo, in Conſequence of their Communication, be ſeized with Convulſions. Spaſms conſtitute the principal Cauſe both of the febrile Rigor and Heat; for, by means of the Spaſms, the Circulation of the Blood through the Parts of the Body is rendered unequal, ſo that ſome Parts are turgid with Blood, whilſt others are entirely deprived of it. In ſome Parts it, alſo, moves more quickly, and in others more ſlowly: Hence ſome Parts are affected with a Horror and Coldneſs, whilſt others are ſeized with a preternatural Heat: And this unequal Circulation of the Blood, ariſing from Spaſms, conſtitutes the very Eſſence of a Fever. None, either of the Antients or Moderns, has more judiciouſly treated of this, than *Hippocrates*, in his Treatiſe *de Flatibus*. For, ſays he, when the lower Belly is obſtructed, Flatulencies run through all the Parts of

the Body [by Flatulencies he means irregular Motions of the Spirits, which produce Spaſms, as is obvious from what he had before ſaid], and, being conveyed to the Parts full of Blood, refrigerate them; ſince, by conſtricting them, they hinder the Afflux of the Blood. But when thoſe Parts, which are the Source and Fountain of the Blood, are refrigerated, ſuch as the Heart and Liver, an Horror penetrates through the whole Blood, and, when the whole Blood is refrigerated, an Horror muſt, of courſe, ſeize the whole Body. For this Cauſe, therefore, the Horrors firſt ariſe before the Fever; and, according to the Quantity in which the diſorderly Spirits have made their Influx, ſuch will the ſubſequent Rigor be. If many cold animal Spirits have made their Influx, the Rigor will be vehement; but if a ſmaller Quantity of leſs cold Spirits have made their Influx, the Rigor will be leſs violent. Theſe Horrors are ,alſo, accompanied with Tremors, which happen by this means: The Blood, dreading a preſent Horror, runs through all the Parts of the Body, and flows principally to the warmeſt Parts: For when the Blood flows rapidly from the Extremities, the Viſcera and Fleſh tremble; for ſome Parts of the Body are full of Blood, whilſt others contain none at all: And the Parts without Blood cannot reſt for Cold, but ſhake, becauſe depriv'd of Heat: Thoſe Parts, on the contrary, which are full of Blood, tremble, and are ſeized with Inflammations, in Conſequence of the Redundance of the Blood. This Doctrine he confirms *in Lib.* 2. *de Morbis*, *Sect.* 5. The Blood being condenſed, the Veins are contracted, and, in their Contraction, contract the Body, and excite a Tremor. If the Blood is but little condenſed, the Symptom produced is only called a Rigor; but if it is greatly condenſed, a Horror is excited, which greatly afflicts the Patient. That a greater or leſs Fever is neceſſarily produced after the Horror, is owing to this: When the Blood, by any Force, (that is, an increaſed Motion of the Heart and Arteries) becomes warm, and again reſumes its own Nature, that is, exchanges a cold for a hot State, the Phlegm and Bile mixed with the Blood, by the violent Motion, alſo, become warm, and even much hotter than the Blood: When theſe Fluids are, therefore, warmed after the Rigor, a Fever muſt ſucceed the Heat of the Blood. In this Paſſage *Hippocrates*, from mechanical Principles, and the Laws of Motion, ſo accurately deſcribes the Progreſs and Generation of theſe Fevers, that we may juſtly doubt whether the Moderns can give a more diſtinct Account of them.

Nor is the Doctrine of *Eraſiſtratus* very different from this of *Hippocrates:* For that Phyſician, as *Celſus*, *in Lib.* 1. obſerves, was of Opinion, that if the Blood was conveyed into the Veins accommodated to the Spirits, that is, into the Arteries, and excite an Inflammation, which the *Greeks* call *Phlegmone*, that Inflammation excites ſuch a febrile Commotion as is perceived in a Fever: And, afterwards, when, mentioning *Eraſiſtratus*, he tells us, that he affirmed, that a Fever was produced by a Tranſfuſion of the Blood into the Arteries, in conſequence of its Redundance. By theſe Paſſages, the Inequality of the Circulation of the Blood, in all febrile Commotions, is excellently deſcribed: For the Rigor which generally precedes the febrile Heat, is a Kind of Spaſm, by which the capillary Veſſels, being obſtructed, hinder the free Circulation and Return of the Blood through the Arteries to the Heart: Hence the Blood, regurgitating to the Arteries and Left Ventricle of the Heart, and preſſing upon them by its Weight, invites a freer Influx of the Spirits, and increaſes the Pulſe. Hence *Hippocrates*, *in Lib. de Flatibus*, informs us, that the Blood, when warm, and forcibly propelled, cannot paſs through a narrow way (the Arteries) with Celerity, becauſe many Things hinder and obſtruct its Motion: By theſe means, the Pulſations of the Arteries are produced, and in this manner Fevers and Pains are excited.

From what has been ſaid, it is ſufficiently obvious, that, in Fevers, the Cold which is principally perceived towards the Extremities, is owing to the Defect of a ſufficient Influx of Blood, and a languid inteſtine Motion of that Fluid; whereas the ſucceeding febrile Heat depends upon an increaſed inteſtine Motion of the Fluids.

But as the Eſſence of a Fever conſiſts in an unequal Circulation of the Blood, and the Cold, Horror, Heat, and other Symptoms depending upon it; we ſhall, having already conſidered the Origin of the Refrigeration, now inveſtigate the Source and Cauſes of the febrile Heat. The various Opinions of Authors, concerning this Phenomenon, are found in *Frid. Hoffmanni Diſſertat. de Caloris & naturalis & præternaturalis Cauſis.*

It is an uſual Queſtion, among Phyſicians, Whether the Violence of the febrile Heat depends on an increaſed Circulation of the Blood. *Borelli*, *in Tr. de Motu animal.* ſeems to have been the firſt who maintained this Opinion: For, ſays he, the moſt proper Affection and Characteriſtic of a Fever is, an increaſed Pulſe, and a violent Commotion of the Heart and Arteries ſucceeded by a febrile Heat. This is not only univerſally agreed upon, but, alſo, confirm'd by Reaſon and Experience; becauſe, upon a violent Commotion and Concuſſion of the Heart, there ſoon after ſucceeds a new and preternatural Heat of the whole Body, as is obvious in Anger, and violent Commotions of the Body. In like manner, when ſuch a Motion of the Heart is removed, that is, when its Action is diminiſhed, and rendered ſlower, a Tepidity, Rigor, and Coldneſs, ſucceed; as it happens in the Colds and Rigors of Quartan Fevers. He afterwards, in the ſame Work, tells us, that, by the vehement and quick Pulſation of the Heart, the Blood, which is return'd during the Reſt of the Heart, being poured from the *Vena Cava*, muſt be impelled into the Arteries, as far as the minuteſt Capillaries, by the ſame briſk Motion with which the Heart is contracted; as is obvious, from the Laws of the Circulation. It is, alſo, certain, from the Evidence of Senſe, that, by a violent and briſk Circulation of the Blood, a Fervor and Heat, which did not before exiſt,are excited through the whole Body; the Origin of which is not, in my Opinion, to be deduced from Motion, conſidered as Motion, but, rather, from the Nature of the Blood itſelf, which contains a Spirit, or Oil, or, rather, igneous Particles, ſheathed up; which, when diſſolved, and diſengaged from their Fetters, in ſuch a manner as to exert their Motion, excite a ſenſible Heat.

Next, therefore, *Borelli* deduces the Heat of the Blood from an increaſed inteſtine Motion of its ſubtil and ſulphureous Parts; for, by the Conſent of all modern Philoſophers, Heat is nothing but an highly rapid Motion of ſulphureous Parts: Nor is it to be doubted but this hot inteſtine Commotion of the Parts of the Blood is increaſed, by an accelerated Circulation, which is diſcovered by the Vehemence, the Frequency, and the Fulneſs of the Pulſe: For when the Pulſe is frequent, vehement, and full, the Blood muſt neceſſarily be moved briſkly through the Veſſels of the Body, and the Heat be ſenſibly increaſed. Nor is it to be doubted, that not only in a ſound State, by an increaſed Vehemence and Largeneſs of the Pulſe, in Conſequence of a violent Motion of the Body, or Commotion of Mind, the Circulation of the Blood, and, conſequently, the Heat is increaſed, but, alſo, in an unſound State, and even in Fevers, eſpecially thoſe of the intermittent, tertian, and continual Kind, as, alſo, thoſe of the burning Kind, and the *Synocha*, the ſame Species of Pulſe muſt produce a briſker Circulation, and, conſequently, an increaſed Heat of the Blood. But this does not happen univerſally; nor do I aſſert, that where-ever there is a preternatural Heat in the Blood, there its Circulation muſt be increaſed: For an increaſed Circulation is not the only Cauſe of the hot inteſtine Motion of the Parts of the Blood, ſince various important Arguments convince me, that ſeveral other Cauſes may concur to throw the minute Particles of the Blood into a violent vertical Motion, even when its Circulation is ſlow and languid: For it is certain, that not only in malignant, but, alſo, in ſeveral other Fevers, there is a preternatural and intenſe Heat, where the Pulſe is neither vehement, ſtrong, nor large; but only quick, or frequent, ſmall, and even weak; which Species of Pulſe by no means diſcovers a quick Circulation of the Blood through the Heart: Beſides, the inflammatory Stagnations of Blood in the Lungs, and other Viſcera, which are accompanied with an internal uneaſy Heat, a Thirſt and Refrigeration of the Extremities, ſufficiently evince that all exceſſive Heat does not proceed from an increaſed Circulation of the Blood: And,certainly, nothing is more obſervable in Practice, than that an intolerable Heat preys upon the internal Parts of the Body, when the external Parts are obſtructed, contracted, dry, and parched; and that, on the contrary, that Heat is leſs troubleſome, which ſeizes only the Surface of the Body, or tends towards the external Parts; ſince this latter Species of Heat indicates a free Circulation of the Blood through the Surface of the Body, whereas the former Species diſcovers an obſtructed or retarded Motion of the Blood through the internal Parts: So that, in Practice, this Difference is to be perpetually obſerved, that, in an internal Heat, the Danger is always great; whereas, when the Heat is external, there are greater Hopes of the Patient's Recovery.

Beſides, it is, alſo, confirmed by Experience, that all ſuch Things as render the Blood fluid, and invite its Motion and Circulation to the external Parts, ſo that a gentle Sweat may ſucceed, which happens under a full and quick Pulſe, which is a Proof of the increaſed Circulation of the Blood, inſtantaneouſly extinguiſh the moſt uneaſy Heat; ſo that the Phyſician acts a judicious Part, who, a few Hours before the Paroxyſm, diſpoſes the Body to ſweat; by which means, the ſucceeding Paroxyſm is always rendered more mild. It, therefore, ſeems conſentaneous to Truth, that,under the inteſtine Commotion of the Fluids, many Effluvia, of an igneous Nature, are excited, that is,put in a violent Motion, which,if they can be freely diſcharg'd through the Emunctories of the Body, greatly leſſen the Cauſe

of the Heat. But if theſe igneous Effluvia remain in the Habit, which happens by a Diminution of the Circulation, and an Obſtruction of Perſpiration, they muſt, by returning into the Blood, redouble, and greatly increaſe, the Heat: For we find, that the Heat excited on the Surface of the Body, proceeds more from the reflected inteſtine Motion of the ſubtil Parts, than from the Circulation of the Blood. It is, therefore, certain, that the Eſſence of Heat conſiſts in an highly quick Motion of ſulphureous Parts; and that this Heat becomes violent under every progreſſive Motion, by an increaſed Impulſe and Attrition on the Veſſels and Fibres of the ſolid Parts: But it by no means follows, that, where the Heat is increaſed, this ſhould always happen by an increaſed Circulation, ſince ſuch an Heat often proceeds from a Retention of the hot Exhalations, and their freſh Repercuſſions on the ſame Object; as is ſufficiently obvious, in violent Inflammations, and hectic Heats.

But they who derive the Origin of febrile Heat from an increaſed Circulation of the Blood, build their Hypotheſes on this Foundation, that a quick Pulſe, which is the pathognomic Sign, and inſeparable Companion of a Fever, is an infallible Proof of *an increaſed Circulation of the Blood*; and that there is a great Difference between a quick and a frequent Pulſe, which are not to be confounded by Practitioners, ſince the latter is rather found in a natural State, and in young Perſons, upon an increaſed Agitation, either of Body or Mind, upon drinking Wine, as, alſo, in a Palpitation of the Heart, and an Aſthma; and, conſequently, cannot be the genuine Sign of a Fever; whereas a quick Pulſe is never abſent from a Fever.

This Doctrine I have inveſtigated with the more Accuracy, not only that we might be the more certain, with reſpect to the Origin of febrile Heat; but, alſo, that, knowing the Nature of the Pulſes exactly, we might be able to form a Judgment, with reſpect to a Controverſy long agitated among celebrated Phyſicians, Whether a frequent, rather than a quick Pulſe, is the eſſential Mark of a febrile Commotion. See PULSUS.

Having already treated of the Cauſes of the Horror, Rigor, and Cold, which are always obſerved in Fevers, and generally precede them; having, alſo, explained the Nature and Origin of febrile Heat; and demonſtrated the Reciprocation of two Kinds of Motions in Fevers, one of which tends from the external Parts to the Centre, and the other from the Centre to the external Parts; we now come briefly to inquire, whether theſe two Motions depend upon merely phyſical, or on moral in Conjunction with phyſical Cauſes; as, alſo, what End they anſwer, and for what Purpoſes they are deſtined. In order to anſwer the firſt Part of this Queſtion, it is to be obſerved, that the Mind, though incorporeal, has, nevertheleſs, in thinking and reaſoning, a powerful Influence on the vital Principle, or the Motion of the animal Spirits, which it either increaſes, diminiſhes, or variouſly determines. As this was never denied by any Perſon who knew the Powers of the Paſſions and Imagination, and in what manner they change not only the Motion and Craſis of the Fluids, but, alſo, the Configuration of the Solids; ſo it is not to be doubted, but a certain febrile Commotion may be excited by Cauſes merely of an intentional and moral Nature. But it is principally to be determined whether a Fever is not moſt frequently produced by Cauſes merely phyſical, acting without any Morality, and without any ſpontaneous Direction of ſuch an increaſed febrile Motion. The firſt who aſſerted moral intentional Cauſes which tend to a certain End, and which are only on the Preſentation of a certain Object, received into the internal Agent, or *Archæus*, was *Helmont, in Lib. de Morborum Ortu & Febribus*; where he prepoſterouſly attempts to reduce the phyſical Cauſes of Diſeaſes to the Claſs of moral Cauſes. But I was always of Opinion, that where known Cauſes, and Explications by ſenſible, obvious, and phyſical Matters, are or can be found, and where Phenomena can be accounted for from the Properties of Bodies, we are never to have recourſe to unknown or incorporeal Qualities in them; for it is to be obſerved, that the Antients careſully diſtinguiſhed the Effects of Nature from the Operations of the Mind; for they never call the Mind the *Curer of Diſeaſes*, which, however, they affirm concerning Nature.

Among the Antients, Nature was ſaid to be the Cauſe and Principle of all the Motions of the Body: But they called the Mind the *Source and Principle of Knowledge and Perception*: Whereas Nature is, by *Hippocrates*, pronounced, abſolutely without Knowledge and Intelligence. With reſpect to this, there is a memorable Paſſage in *Cœlius Aurelianus*, *Lib.* 1. *de Paſſionibus acutis*, in which he mentions *Aſclepiades*, who called the Soul *A Collection of the Senſes*; and affirmed, that in the human Body, all things happened neceſſarily; and every Phenomenon had its reſpective Cauſe; that Nature was no more than the Body, or its Motion; and that ſhe was capable not only of being beneficial, but, alſo, of being injurious; for whether the Soul, which in Men is the Principle of Determination, and in Brutes the Source of voluntary Motion, is only ſenſitive, or at once ſenſitive and rational, yet it can perceive nothing without Ideas, that is, without Motions impreſſed from external Objects: But theſe Motions are only received by various Senſories, deſtined for that End. Where, therefore, the various Senſories are defective, there, alſo, the Perception and Direction of the Motions are defective; for Touch is abſolutely inſufficient for accounting for, and underſtanding, the Nature, Figure, Motion, noxious Qualities, and Force of material morbific Cauſes: Hence, alſo, it is eaſily underſtood, that in Diſeaſes the particular Direction of the Motions correſponding to the Nature of the morbific Cauſe can by no means be received by the Soul.

It is indeed true, that Nature is highly obſervant of Number, Order, Time, and Place, as is obvious in the Formation, Nutrition, and Conformation of the Body, the Cure of Diſeaſes, and the carrying on of the Excretions. But this happens not by any Intelligence of the Things with which ſhe acts, and an arbitrary Power of performing particular Motions, or of directing them to a particular End, of which ſhe is entirely ignorant: But rather thoſe Effects directed to a certain End, are produced alone, by mechanic Laws, and the Influence of Bodies acting and re-acting on each other, under a certain Meaſure, Degree, and Proportion; which is obvious from this, that theſe natural Motions may be at Pleaſure ſuſpended, increaſed, or diminiſhed, by mere corporeal Actions. Beſides, we have a manifeſt Inſtance of a regular and organic Structure in Vegetables, the Fabric of which expreſſing great Order and Art, does not depend upon any intelligent Faculty, but on a merely neceſſary Efficacy of Motion, though not without Order. But, without inſiſting any longer on this, we ſhall only obſerve, that it is of great Importance in Medicine, not to confound thoſe Effects of Diſeaſes, which flow from merely neceſſary Cauſes, with thoſe which have, in Conjunction with them, a certain free and immaterial Principle of Action, as is obvious in the Paſſions of the Mind, where there is a great Difference between the Mind and the Diſeaſe, ſince the Diſeaſe is only called that, to the Production of which merely corporeal Cauſes concur; whilſt a Paſſion of the Mind is ſaid to be produced, when the Mind labours under any Diſorder, though it often produces a morbid Effect of the Body.

From what has been ſaid we conclude, that a Fever is not to be called *ſalutary*, becauſe Nature knows the internal Matter to be peccant, and for that Reaſon endeavours at certain Times and Places to eliminate it from the Body, according to the different Quality of its Peccancy, in a certain Degree and Proportion. This may be granted, with reſpect to the Mind; when put in a Paſſion, upon the Preſentation of ſome external Object of the diſagreeable Kind; but it cannot be applied to Motions merely mechanical: For as a Paſſion of the Mind is different from a Diſeaſe, ſo, alſo, Anger is different from a Fever; but every Fever does not ſuppoſe an immaterial and ideal Act or Perception of the Mind. A Fever cannot, therefore, be properly called a ſalutary and uſeful Thing, excited for a good End, ſince Nature, and even the ſenſitive Soul, is abſolutely ignorant of the Condition of the morbific Cauſes, the Ways, Places, and Ends intended by Nature, which are internal. A Fever, therefore, is not, in my Opinion, to be called *A Motion in itſelf ſalutary*, neither with reſpect to its Principle, or efficient Cauſe, nor with reſpect to its End or Effect; becauſe it is often hoſtile, and even fatal, to human Nature; but only becauſe it ſometimes, by Accident, produces a ſalutary Effect. But to illuſtrate this by an Example: Thus the ſtrong ſpaſmodic Conſtriction of the Coats of the Stomach, or Inteſtines, by an Emetic or Purgatives, is not in itſelf a good and ſalutary thing, ſince it is plainly preternatural, and, conſequently, morbid, and the Source of violent Symptoms; yet, as it removes the impure, viſcid, and corrupted Sordes from theſe Parts, it does, for that very Reaſon, produce a ſalutary Effect. Thus, alſo, Spaſms of the internal Parts, which generally produce ſpontaneous Hæmorrhages, are not of themſelves good, becauſe they ſometimes excite mortal Hæmorrhages; but at other times, when the Blood is redundant, they accidentally produce this Effect in a ſalutary manner. The ſame holds true of a Fever, which, conſidered in itſelf, can neither be ſaid to be uſeful nor ſalutary, ſince Half of Mankind are deſtroyed by it: Yet it often produces a ſalutary Effect, by reſtoring the impure morbid Body to perfect Health.

We now come to inquire, in a particular manner, in what Patients, and by what means, a Fever proves a ſalutary Medicine. But we muſt firſt of all obſerve, that the Cauſe which excites the febrile Commotion in the muſcular Syſtem, is often not only a Redundance of Blood and Juices, but, alſo, a Collection of impure excrementitious and viſcid Sordes, both in the Primæ Viæ, and in the Veſſels: Which two Cauſes generally proceed both from a retarded Circulation of the Blood, and an Infarction and Obſtruction of the Emunctories, as generally

generally happens in burning Fevers, a bilious *Synocha*, a continual Tertian, a catarrhous Fever, and others of a like Nature. In order, therefore, to expel the Cauſe of theſe Misfortunes, Nature arms herſelf not by a kind of Free-will, but from a phyſical Neceſſity, ſtimulated by the Action of the hoſtile and peccant Matter, whilſt the ſpaſmodic Motion, not only of the external and membranaceous Parts, but, alſo, of the Muſcles, and eſpecially of the Heart, is increaſed by a greater Influx of the Spirits; for both a more ſtrong and intenſe inteſtine and progreſſive circulatory Motion are required, that the redundant and peccant Juices, formed under this double and languid Motion, may be eliminated from the Body, after the Obſtructions are reſolved, and the Humours prepared and diſpoſed for an Evacuation; for the Antients juſtly obſerved, that the Cures performed by Nature, were performed, firſt, by Maturation and Concoction; then, by Diſcuſſion and Rarefaction; and, laſtly, by Solution and Excretion. See *Hollerius, in Schol. ad Aphor. Hippocrat.*

By Concoction, or Maturation, they underſtood that of the pathologic Kind, a fitting of the excrementitious Matter for Excretion, juſt as phyſiological Concoction is a fitting of the Subſtance of the Aliments for Nouriſhment: For as the crude, coarſe, partly immoveable Humours, and ſuch as are not fitted to the Pores of the Emunctories, are morbid, theſe are firſt to be prepared for an Evacuation, that is, the viſcid Matter is to be incided and abſterged; that which is thick is to be rendered fluid, the intemperate and acrimonious Humours are to be temperated and corrected; all which were included in Maturation and Concoction among the Antients, who order, that not crude, but concocted Matter, ſhould be expelled from the Body, both by Nature and Art.

But as the Excretion of the peccant Matter is leſs commodiouſly carried on, unleſs the Paſſages are previouſly free, and the Emunctories open, hence the Obſtructions are to be reſolved, and the ſtagnant Humours, fixed in the capillary and excretory Veſſels, are to be reſolved and colliquated. After theſe Ends are obtained, the Excretion of the peccant Matter afterwards ſucceeds happily.

Theſe are the uſual Manners; this the common Method; and this the Order uſed by Nature, in curing Diſeaſes, or removing morbific Cauſes from the Body: But ſhe brings about all theſe Ends by one Inſtrument, which is Motion.

But the Motion of the Blood is twofold; one, the hot inteſtine Motion of the ſulphureous Parts; the other progreſſive and circular: Both theſe Motions are neceſſary, in order to prepare and, afterwards, eliminate the peccant Matter; for certainly the Circulation of the Blood alone, though intenſe and briſk, is not ſufficient for theſe Purpoſes, unleſs when accompanied with an increaſed inteſtine Motion, or an Increaſe of Heat: And though it cannot be denied, that in Fevers an exceſſive Heat does Harm to the Body, yet Nature requires both an increaſed Circulation, and an accelerated, hot, inteſtine Motion, in order to ſubdue and remove the febrile Cauſe; for what more happily diſſolves glutinous and viſcid Humours than Heat? What is more efficacious or expeditious in removing Obſtructions brought on by theſe Sordes, or in opening the obſtructed Emunctories, than hot and fluid Blood? What ſooner leſſens the Redundance of the Blood and Humours, and renders that which is thick and immoveable, fluid, than Heat? Hence the Antients juſtly eſteemed the febrile Heat neceſſary to concoct, that is, to incide, attenuate, and prepare the peccant Matter for Evacuation. And that moderate Heat is in itſelf highly beneficial to the Body, is ſufficiently obvious from this, that Men of hot Conſtitutions, young Perſons, and ſuch as uſe Exerciſe, and drink warm Liquors, are rarely ſubject to chronical Diſorders, and Obſtructions of the Viſcera. And this is, alſo, the Reaſon why all intermittent Fevers, eſpecially thoſe of the Quartan kind, as *Hippocrates* obſerves, if they ſeize in the Summer, are far ſhorter, and more eaſily cured, than if they happen in the Autumn and Winter; for the Summer Intermittents often ceaſe ſpontaneouſly, in the Month of *June*, when the Air is moſt intenſely hot. Beſides the greater Heat is perceived in the febrile Paroxyſms, the ſooner the Fever is terminated; and, on the contrary, the more languid and ſlow the Heat is, the more fixed and radicated is the Cauſe of the Diſorder. In order to deſtroy this Doctrine, it may be replied, that ſuch Effects are to be aſcribed not ſo much to Heat, as to an increaſed Circulation of the Blood, which is neceſſarily productive of Heat. But though an increaſed Circulation of the Blood cannot happen without an Increaſe of Heat, yet, as we have already obſerved, every Heat in the Body is not produced by an accelerated Circulation; ſince very often, when the Pulſe is languid and frequent, and the Extremities cold, the interior Parts are hot, the Tongue dry and black, and the Thirſt inſatiable: Beſides, as the inteſtine Motion is abſolutely different from the Circulation of the Blood; ſo, alſo, the former, in a different manner, contributes to Life: Nor, if the Circulation alone, and Excretion of the uſeleſs Parts, were ſufficient for the Purpoſes of Life, would a certain Temperature, Mixture, and Moderation of the Elements of the Blood, and eſpecially of the Sulphur, which is the Foundation of the inteſtine Motion, be neceſſary to the Preſervation of Life and Health; the aſſerting the contrary of which is, however, abſurd.

Hence the Antients juſtly aſſerted, that Life conſiſted in Heat; that Nature, by means of Heat, attacked the morbific Cauſes of Diſorders; and that there was no Animal, in the Blood and Juices of which there was not ſome hot Subſtance; becauſe, without an hot inteſtine Motion, there can be no Generation, no Life, nor any vital Motion performed: Nor does it hence follow, that there is no Heat which is not perceptible by the Touch; for the Senſes are not the only Teſt by which Heat is to be judged of. The hot inteſtine Motion may be ſaid to happen, partly with reſpect to Cold, and partly with reſpect to its Effect, eſpecially that of the rarefactory Kind; ſo that, in order to oppoſe this Doctrine, it is to no purpoſe to aſſert, that Fiſhes may live without Heat: But Heat is abſolutely neceſſary in Animals, to promote the ſpirituous Quality of the Humours, to preſerve them fluid, to keep the Pores open, and to carry on Nutrition and Excretion. Hence *Galen*, in his Treatiſe *de Uſu Partium*, *Lib.* 14. *Cap.* 6. calls Heat the firſt Inſtrument of Nature: For the ſame Reaſon, Nature, in ſubduing Diſeaſes, uſes a ſtrong and preternatural Heat, as is obvious in Fevers; for, by means of Heat, the peccant Matter is not only ſubdued and attenuated, but, alſo, rendered fit for Excretion; for though it cannot be denied, that an intenſe Heat is prejudicial to the Body, by obſtructing the Evacuations, eſpecially that by Sweat; yet, if we carefully examine the Matter, we ſhall find, that Nature does not ſo much cure Diſeaſes by Evacuation, as by a Diſſolution and Rarefaction of the Humours. And if the Matter is to be evacuated, Nature diſpoſes it for Excretion, concocts it, and opens the Pores, which Ends are commodiouſly anſwered by Heat; ſince a Cure conſiſts not ſo much in the Evacuation, as in the Correction of the morbific Cauſe: Hence, in my Opinion, thoſe are greatly miſtaken, who imagine, that the Matter which, after the Height of the Diſeaſe, is evacuated on the critical Days, is the morbific Cauſe. It is not, however, to be doubted, but the Evacuations in Fevers, carried on in due Quantities, and at proper Times, are excellent Signs that the Patient recovers; and that Nature is ſuperior to the morbific Cauſe; becauſe they evince, that every Thing is calm in the Body; that a free and equable Circulation of the Blood is reſtored; and that the ſpaſmodic Contractions of the Parts have ceaſed: Whence the Evacuations not only of the morbific Matter, but, alſo, of other excrementitious Humours, generated under the febrile Commotion, are freely carried on: Hence ſuch critical Evacuations are ſalutary, and, conſequently, not to be checked: For it is to be obſerved, that the morbific Cauſes of Diſorders act principally by Spaſms; and, under Spaſms, the Circulation of the Blood, and the Excretions, are diſturbed. Hence, if the Evacuations are duly carried on, it is a good Sign, that the morbific Cauſe is ſubdued; that the morbid Motions are allayed; and that every Thing is again returning to a natural State: For as ſoon as the Evacuations of the critical, but not of the ſymptomatic, Kind begin to be duly carried on, in conſequence of a proper Circulation of the Blood, the Force of the Diſeaſe forthwith remits.

We, therefore, affirm, that a Fever is ſalutary, becauſe, by the hot inteſtine Motion, and an increaſed Impulſe of the Blood through all the Veſſels, the viſcid Crudities are attenuated and diſſolved; the Obſtructions of the Glands removed; the ſtagnant Humours rendered fluid; the corrupted and redundant Juices evacuated, and the exceſſive Humidity of the Habit diſſipated: So that a Fever is often an excellent depurating and evacuating Remedy. This Doctrine is confirmed, not only by Authorities, but, alſo, by Experience. Thus *Hippocrates*, in *Aph.* 70. *Sect.* 5. informs us, that they who are ſeized with a Quartan Fever, are not ſubject to Convulſions; and that they who are afflicted with Convulſions, are freed from their Diſorder, upon the Approach of a Quartan; for no Fevers are more ſalutary than thoſe of the Tertian and Quartan kind, as is univerſally known: For, if theſe Fevers are periodical, and not too long continued; or if they happen before the Strength is conſumed, or Old-age comes on, they excellently depurate the Blood, powerfully remove Obſtructions about the Veins of the Meſentery, and reſolve and carry off the coagulated, thick, and viſcid Humours, which are the Cauſe of the Spaſms: They, alſo, dry the too moiſt Nerves, and corroborate ſuch as are paralytic and lax: Hence ariſes the Opinion of the common People, that a Quartan produces Strength; and that the Perſon who is ſeized with a Tertian or Quartan, will for ſome Years live free from all Diſeaſes. This Doctrine is, alſo, confirmed by *Aph.* 26. of *Sect.* 2. where we are told, that "It is "better a Fever ſhould ſucceed Convulſions, than Convul-

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" ſions a Fever." But it is here to be obſerved, that the Convulſions here meant muſt ariſe from a Redundance, and not from a peccant Quality of the Juices; becauſe both the inteſtine Motion, and the Circulation of the Blood, attenuates and diſcuſſes the thick, viſcid, and compact Matter lodged in the Brain, Nerves, and *Primæ Viæ*. But *Hollerius*, in his Commentary on the ſame Aphoriſm, juſtly obſerves, that every Fever does not put an End to Convulſions, but only one of the moderate Kind, which is neither too weak, nor ſo violent and malignant as to impair the Strength. *Hippocrates*, alſo, tells us, in *Epidem. Lib.* 6. that a Quartan cures Melancholy, the Epilepſy, the Leproſy, and the Itch: For theſe terrible Diſorders ariſe almoſt from the ſame Cauſe which produces a Quartan; that is, a Stagnation of impure and viſcid Blood, about the abdominal Viſcera; and an Infarction and Induration of the Spleen, Liver, and Pancreas. But, as in a Quartan, a due febrile Motion diſſolves obſtinate and old Obſtructions, theſe violent Diſorders are by this means removed. *Langius*, in *Epiſt.* 16. *Lib.* 1. informs us, that upon the Criſis of Fevers, eſpecially thoſe of the Quartan kind, he has often ſeen the Itch ſpontaneouſly removed, without the Aſſiſtance of any Medicines. As for an Epilepſy, *Hippocrates*, in *Epidem. Lib.* 5. *T.* 6. informs us, that " Perſons labouring under a Quar-" tan are not ſeized with an Epilepſy; or if they have for-" merly been ſubject to it, they are freed from it by a ſuc-" ceeding Quartan." And this Aſſertion is expreſsly confirm'd in *Sect.* 5 *Aph.* 20. where we are told, that thoſe afflicted with a Quartan are not eaſily ſubject to Convulſions; and, if they have formerly laboured under them, they are freed from them by a ſupervening Quartan.

Nor is it a difficult Taſk to aſſign a Reaſon for this; ſince it is univerſally agreed upon, that a chronical Epilepſy is produced by Obſtructions, and the partly viſcid Impurities ariſing thence, and which Nature, by an univerſal Spaſm principally ariſing in the Meninges of the Brain, and extending itſelf through the whole muſcular Syſtem, endeavours to remove. But ſuch Obſtructions, and viſcid Humours, hindering the free Circulation of the Blood through the Veſſels of the Head, are reſolved, diſcuſſed, and eliminated, by the Heat and Horror of a Quartan: For certainly, by ſuch a ſtrong Motion of the Fibres, and ſuch an increaſed Impetus of the Blood, as is obſervable in febrile Paroxyſms, Obſtructions are more effectually removed, and ſtagnant Humours more thoroughly diſcuſſed, than by any other Remedy, how valuable ſoever, whether of the ſudorific, or of the aperient and evacuating Kind. It is, alſo, owing to this, that thoſe who have formerly laboured under a Quartan, are not eaſily ſeized with an Epilepſy; becauſe a regular Quartan, by reſolving Obſtructions, frees the Body from thoſe Cauſes which produce an Epilepſy.

Beſides, a gentle Apoplexy is diſcuſſed by a Fever: Thus *Hippocrates*, in *Aph.* 5. *Sect.* 5. informs us, that if drunken Perſons are ſuddenly depriv'd of their Voice, they die convulſive, unleſs they are forthwith ſeiz'd with a Fever. In Drunkenneſs, when the Body is leſs perſpirable, eſpecially in conſequence of a large Quantity of generous Wine, it may happen, that the Head may be filled with too large a Quantity of Blood, which too much diſtending the Arteries, and Veins of the Plexus Choroideus, intercepts the Paſſage of the Spirits: But in a Fever, the accelerated Circulation of the Blood not only opens the obſtructed Veſſels of the Brain, but, alſo, powerfully diſcuſſes the Matter, whether aqueous or viſcid, which is ſtagnant in its Pores.

Hippocrates, alſo, pronounces a Fever a peculiar Remedy in hypochondriac Diſorders, ſince in *Aph.* 40. *Sect.* 6. he informs us, that " A Pain of the Hypochondria, without an Inflam-" mation, but ariſing from Obſtructions, Flatulencies, or a " cold unequal Temperament, is removed by a ſupervening " Fever." It is perpetually inculcated by *Hippocrates*, that ſuch Diſorders as proceed from Obſtructions, a viſcid Sordes, or Infarctions of the Viſcera, are commodiouſly terminated by a Fever; becauſe in a Fever, the increaſed inteſtine, and progreſſive Motion of the Blood, attenuates, incides, and reſolves the immoveable Matter, and diſpoſes and prepares that which is fixed and ſtagnant, to an Evacuation. I have often obſerved in Practice, that hyſteric Symptoms and Spaſms in the abdominal Region of old Women, after a Suppreſſion of the Menſes, have been removed by a Fever, accompanied with an effectual Heat and Horror. And if we carefully conſider the Thing, we ſhall find that the ſpaſmodic and febrile Motions, ſo familiar to hypochondriac Patients, eſpecially in the Autumn and Winter, are uſeful in carrying off, through the Emunctories of the Body, the excrementitious Sordes, lodged in the Maſs of Blood and Humours.

But that a Fever is the ſalutary Inſtrument of Nature, by which ſhe frees herſelf from preſent Danger, is obvious from this, that the Redundance of Serum, whether pure or tainted with excrementitious, acrid, or bilious Salts, by which Nature is oppreſſed, is by a ſtrong febrile Motion, excited in the muſcular Syſtem, commodiouſly carried through proper Emunctories; as is obvious in catarrhous, rheumatic, and arthritic Fevers, as, alſo, in an Eryſipelas, the Meaſles, Small-pox, and Purple Fever, where there is always a certain febrile Commotion, and a ſubſequent ſalutary and critical Evacuation. Beſides nothing is more common than for a Fever of the inflammatory Kind to ſucceed an Extravaſation and Stagnation of the Humours; and this Fever is not, in my Opinion, excited by the arbitrary Determination of the Mind, in order to remove the ſtagnant Humours tending to Corruption; but it is rather a mechanical and neceſſary Effect, whilſt the peccant Matter, not only by its Redundance, but, alſo, by its irritating and hoſtile Quality, ſtimulates the Fluid which actuates the Membranes and Muſcles to an exorbitant Motion, which, being afterwards increaſed, though preternatural, is nevertheleſs, if duly managed, of ſingular Service in diſcuſſing and reſolving the extravaſated Blood: Hence it is obvious, that *Hippocrates*, and the Antients, were in the right, when they aſſerted, that Nature was the beſt Curer of Diſeaſes, that is, by an increaſed and intenſe Motion, which is of the febrile Kind: Hence, alſo, it is obvious, that *Aſclepiades*, according to *Celſus*, *in Lib.* 3. *Cap.* 4. *de diverſis Curationum Generibus*, was in the right, when he ſaid, that, in the Cure of Diſeaſes, he uſed the Fever as a Remedy. *Sydenham*, alſo, affirms, that a Fever is the Inſtrument by which Nature ſeparates the impure from the pure Parts.

From what has been ſaid, we may deduce the following Conſiderations, very uſeful in Practice: Firſt, As a Fever is ſo beneficial to the Body, Phyſicians ought not in the Beginning to ſuppreſs febrile Commotions, becauſe ſuch a Practice, in continual and acute Fevers, ſuch as the Meaſles and Small-pox, an Eryſipelas and the Gout, induces not only immediate Danger, but, alſo, ſometimes Death; and intermittent Fevers, when too ſoon ſuppreſſed, are found from Experience to terminate in violent Obſtructions of the Viſcera, and ſlow Fevers reſulting thence, an Hectic, a Dropſy, and ſpaſmodic and convulſive Diſorders: The whole Skill of a Phyſician ſeems to conſiſt in diſtinguiſhing thoſe febrile Motions of Nature which may produce a good Effect, and be eſteemed ſalutary and critical, from thoſe which are prejudicial, ſymptomatic, and pernicious. The former are not to be immediately ſuppreſſed; but, if languid, promoted; and, if exceſſive, moderated: But they ought never to be totally checked, nor too much heighten'd; ſince the beſt Intention the Phyſician can purſue, is to attack the morbific Cauſe of theſe hot Commotions, and leſſen it gradually till it is quite removed. It is, therefore, imprudent to abuſe the *Peruvian* Bark, which, if rightly uſed, is a divine Medicine, as, alſo, Opiates, and Subſtances poſſeſſed of a ſtyptic Quality, in the Cure of Intermittents: Thoſe Phyſicians, therefore, err, who judging a Fever to be a bad Thing, whereas it is the Effect of a good Cauſe, immediately endeavour to ſuppreſs it; in which they are as faulty as thoſe who immediately ſuppreſs the Menſes, or Hæmorrhoids, by Aſtringents; a Practice generally productive of the worſt of Symptoms. A Phyſician is, therefore, never to attempt the Suppreſſion of a Fever; but to try the Removal of its Cauſe: And when that cannot be commodiouſly done, he is to moderate the Fever; which, alſo, tends to prepare and expel the morbific Cauſe.

From what has been ſaid, 'tis obvious, that all Aliments and Medicines, which refrigerate too much, coagulate the Humours, and which, by their Viſcidity, their Acidity, or their anodyne Quality, retard the Motion of the Blood, are ſo far from being uſeful in the Cure of Fevers, that they are rather injurious. The Phyſician ought rather to render the Humours fluid, and promote the Circulation of the Blood through all the Emunctories. Hence *Helmont*, in *Tr. de Febribus*, *Cap.* 9. juſtly affirms, that Diaphoretics are the only ſpecific Remedies for Fevers. Nor are Veneſections, Evacuations, and Alteratives, any farther conducive to the Cure of Fevers, than as they promote a free Circulation and Tranſpiration; for if it is true, that Fevers generally ariſe from any obſtructed Tranſpiration, and a diminiſhed Circulation of the Blood, they muſt of courſe be cured by an Increaſe of the Circulation and Tranſpiration. It is, alſo, obvious from what has been ſaid, that Medicines are moſt commodiouſly exhibited when Nature is in a Commotion; for, by this means, ſhe the more eaſily produces the deſigned Effects. With reſpect to this, *Helmont*, in *Lib. de Febribus*, *Cap.* 9. tells us, that, if on the Day of the Acceſs, and at a proper time, Medicines are exhibited, Fevers are often removed by one Doſe. The proper time is, about an Hour before the Paroxyſm, on an empty Stomach, that thus the Medicine may be ſufficiently actuated; for if the Medicine is exhibited on the Days of Intermiſſion, or long after the Paroxyſm is begun, it is uſed in vain, whilſt it is not aſſiſted by Nature, either in actuating, or expelling, the Matter, which is the occaſional Cauſe of the Diſorder. Beſides, at ſuch times, the Medicine

is rather hurtful than beneficial, becauſe it proves a Stimulus to Nature, when ſhe is inclined to Reſt.

From what has been ſaid, we, alſo, learn, that it is a bad Sign, when a violent Cauſe, or Obſtruction, is preſent, if the Fever is ſlow or ſlight, or if the febrile Motion does not correſpond to the Cauſe. Hence *Hippocrates*, in *Aphor.* 40. *Sect.* 4. juſtly affirms, that it is never a good Sign, when the Body is ſometimes hot, and ſometimes cold; for this is a Proof, that the Diſorder will be long protracted. Hence, alſo, the Reaſon is obvious, why in weak Bodies, and thoſe in which the Motions of the Humours towards the external Parts are not ſufficiently free, there are no genuine Evacuations, but the Patient is afflicted with Tranſlations and Abſceſſes, not to be cured without great Difficulty. We, alſo, obſerve in Practice, that thoſe Fevers are far worſe, and of a more malignant Nature, which do not diſcover themſelves by Heat, a quick Pulſe, and Thirſt, than thoſe which appear with theſe Symptoms, tho' exceſſive. I have, alſo, obſerved, that in ſlow Fevers, the Supervention of an hot Fever with Horror is an excellent Sign of Recovery.

From what has been ſaid, we conclude with *Hippocrates*, in *Epidem. Lib.* 2. that 'tis ſometimes the Buſineſs of a Phyſician to excite Fevers; for, ſays he, in *Epidem.* that which Nature does ſpontaneouſly, ought to be done by the Art of the Phyſician. But in *Aph.* 21. *Sect.* 5. he expreſly adviſes the exciting of ſuch a Fever; "For, ſays he, ſometimes in a "Tetanus without an Ulcer, in young and fleſhy Perſons, a "pouring on of cold Water recalls the Heat, and that Heat "reſolves the Diſtemper." He, alſo, confirms this Method of Cure in *Lib.* 3. *de Morb.* in the following manner: "Pour "a large Quantity of cold Water on the Patient; then cover "him with warm and thin Cloths, but let Fire be removed; "and this Method is to be uſed both in a Tetanus, and in an "Emproſthotonus." For when cold Water is poured upon a young Body in the Middle of the Summer, the Pores and Fibres are ſeized with a Rigor and Horror, and the Blood is repelled to the internal Parts; and thus, ſtimulating the Muſcles of the Heart, it excites violent Motions, which are highly beneficial in removing the Cauſes of chronical Diſorders; for, as *Hippocrates* in *Lib.* 2. *de Morb. Sect.* 5. affirms, a greater or ſlighter Fever always ſucceeds a Rigor. Without finding Fault with this Method, we ſhall only obſerve, that it is far ſafer by powerful Medicines, which convey Motion to the Blood and Humours, to remove the Cauſes of chronical Diſorders. Hence the Reaſon is obvious, why Decoctions of the Woods, mineral Waters, Mercurials, Sudorifics, and Diaphoretics, are of ſuch ſingular Efficacy in removing obſtinate chronical Diſorders.

Beſides, 'tis certain from Experience and Obſervation, that by violent Anger the moſt obſtinate chronical Diſorders have ſometimes been removed; for which no other Reaſon can be aſſigned, than that in Anger, as well as in a Fever, the Blood and Humours are moved with a kind of preternatural Impetus, as is obvious from the Vehemence and Quickneſs of the Pulſe, the Heat of the Body, and the quick Reſpiration. Thus *Variola*, in *Obſ. Med.* 4. *Lib.* 2. informs us, that a certain Man was cured of a Quartan, which would yield to no Medicines, by being put into a violent Paſſion by his Friends. The ſame Author, alſo, informs us, that a Relation of his own, after being convulſed for about ſix Years, in ſuch a manner, that he could not work, his Hams being contracted, was by a ſudden Paſſion, whilſt he endeavoured to beat a Servant, cured of his Misfortune, becauſe, in that Attempt, his Body was ſo violently exagitated, that the Nerves of his Legs being relaxed, and his Hams ſoftened, he was not only able to walk and ſtand ſtrait, but, alſo, remain'd free from his Diſorder during the Remainder of his Life. Beſides, ſays the ſame Author, I knew a Man cured of a Palſy of one Side of the Body, which would yield to no Medicines, by the ſole Influence of Dread and Anger exagitating the Body. And in *Paulin's Faſcicul. Obſ. ad Acad. Nat. Curioſ. Dec.* 2. *An.* 6. *annex.* we have an Inſtance of the total Cure of a Palſy produced by Anger alone. *Frederic Hoffman.*

PYRGITÆ, πυργῖται, from πυργὸς, a Tower. Sparrows, thus called, becauſe they uſually build their Neſts, and inhabit Towers.

PYRIA, πυρία, or πυρίη. Any kind of Heat applied to the Body by way of Fomentation; or, a Fomentation in general.

PYRIASTES. The ſame as PROTOGALA.

PYRIATERION, πυριατήριον. A Laconic Bath, Bagnio, or Sweating-room.

PYRIATOS. A heated Brick.

PYRICAUSTA, πυρίκαυστα. Burns, or Scalds.

PYRIEPHTHOS. The ſame as PROTOGALA.

PYRIFORMIS MUSCULUS. This is a ſmall oblong Muſcle, of the Figure of a flat Pear, or Pyramid, from whence it has its Name. It is ſituated almoſt tranſverſly between the Os Sacrum and Iſchium, being covered and hid, by the firſt two *Glutæi.*

It is fixed to the inferior lateral Part of the Os Sacrum, by fleſhy Fibres, and to the neighbouring Part of the anterior, or concave Side, of that Bone, by three Digitations lying between the anterior Holes. It is, likewiſe, fixed by a ſmall Inſertion to the *Ligamentum Sacro-ſciaticum*, and Edge of the great Sinus of the Os Ilium.

From thence it runs tranſverſly towards the Joint of the Hip, its Fibres contracting in Breadth, and end, in a ſmall Tendon, which is inſerted in the Middle of the internal Labium of the upper Edge of the great Trochanter, by two or three Branches. The upper Part of this Tendon receives ſeveral Fibres from the *Glutæus Medius*; and its lower Part is united to the *Gemellus Superior*, and Tendon of the *Obturator Internus.*

Sometimes there are two *Pyriformes* ſeparated by the *Nervus Sciaticus.*

See the Uſes of this Muſcle under the Article QUADRATUS. *Winſlow's Anat.*

PYRIMACHUS, or PYROMACHUS, πυρίμαχος. Antimony reduced to a ſtony Hardneſs, Copper fuſed with Sulphur, and thus rendered hard, is by ſome thus called.

PYRINE, πυρίνη. The Name of a Plaiſter deſcribed by *P. Ægineta.*

PYRIPHLEGES, πυριφλεγὴς. An Epithet for a Perſon labouring under an exceſſive febrile Heat.

PYRISTIRION. The ſame as PYRETERION.

PYRITES. Offic. Boet. 516. Fabr. 29. Charlt. Foſſ. 17. 52. Aldrov. Muſ. Metall. 570. Worm. 39. 129. Schw. 388. *Lapis Pyrites.* Math. 1381. *Marchaſitæ variæ, ſeu Pyrites.* Mer. Pin. 212. *Marchaſita*, Moderni. FIRE-STONES.

It is found in almoſt all Mines, being the moſt fruitful Matrix of almoſt all Metals, Salts, and Sulphurs; for it is not purely a Stone, but ſeems to be the moſt fertile of all Minerals. There are great Varieties of it, with reſpect to Colour, Figure, Mixture with Metals, Stones, and other Foſſils; for it enters in various Proportions the Compoſition of Iron, Lead, Tin, Silver, Copper and Alum, and, alſo, that of black Flints, Pit coal, Lime-ſtones, Chalk-ſtones, and others. *Dale.*

The *Pyrites* is a kind of Stone, of which Copper is made. The beſt Sort reſembles Copper, and eaſily emits Sparks of Fire when ſtruck. They burn it in the following manner: They waſh it over with Honey, then put it into a gentle Fire of Charcoal, and continue to blow till it becomes red-hot. Others put the Stone, firſt well waſhed with Honey, into a great Fire of burning Charcoal; and, when it begins to be red-hot, take it out; and, blowing away the Aſhes, waſh it over with Honey, and burn it again, till it becomes equally friable in all Parts; for it frequently happens, that the Superficies only is burnt; when it is thus well burnt and dry'd, they lay it aſide, to be uſed as Occaſion offers. If it requires Waſhing, it muſt be waſhed in the ſame manner as *Cadmia.*

The *Pyrites*, whether crude or burnt, is of an heating and abſterſive Quality. It deterges ſuch things as darken the Sight, and concocts and diſcuſſes Hardneſſes. Made into a Plaiſter with Roſin, it repreſſes Excreſcences of the Fleſh, by ſomewhat of an heating join'd with an aſtringent Quality. Some call it, when burnt, as before deſcribed, *Diphriges. Dioſcor.*

PYRIUS PULVIS. Gunpowder. This is made of Charcoal, Brimſtone, and Saltpetre, intimately mixed together, in different Proportions, according as the Maker would have it more or leſs ſtrong.

When a Spark of Fire drops upon this Mixture, it immediately catches the black Oil in the Charcoal, which, in this Caſe, may be conſidered as a kind of Tinder: This ſets Fire to the Brimſtone, and the Brimſtone lays hold on the Acid of the Nitre or Saltpetre, which, expanding itſelf ſuddenly with great Violence, burſts through, or carries along with it, whatever oppoſes it.

The following Account is generally given of the Invention of Gunpowder: That it was firſt diſcovered by one *Conſtantine Anelzen*, a Monk of *Fribourg*, and a Chymiſt; who, having put a Mixture of Charcoal, Saltpetre, and Brimſtone, in a Mortar, and covered it with a Stone, it happened to take Fire, and blew up the Stone; which Accident, occaſioning him to make farther Reflections and Experiments, gave Riſe to this ſurpriſing Invention. But others affirm *Bartholdus Schwartz* to be the Diſcoverer, and that it was firſt uſed by the *Venetians* about the Year 1380. during their Wars with the *Genoeſe.*

But this Account is contradicted by others, who tell us, that in the Year 1343. the *Moors*, being beſieged by *Alphonſus*, the Eleventh of that Name, King of *Caſtile*, defended themſelves by ſhooting off a kind of Iron Mortars, which made a Noiſe like Thunder: And that, in a Sea-fight between the King of *Tunis* and the *Mooriſh* King of *Seville*, above four hundred Years ago, thoſe of *Tunis* made uſe of certain Iron Tuns or Barrels, where-

wherewith they threw Thunder-bolts of Fire. To which may be added what *Du Cange* aſſerts, that Gunpowder is expreſly mentioned in the Regiſter of the Chamber of Accounts in *France*, as early as the Year 1338.

However, this is certain, that *Roger Bacon*, one of our Countrymen, and a Frier of *Merton* College in *Oxford*, ſo famous among the Commonalty for the romantic Story of his Brazen-head, was well acquainted with the Nature and Compoſition of Gunpowder, at leaſt an hundred and fifty Years before *Schwartz* was born; as appears from his Treatiſe *de Nullitate Magiæ*, publiſhed at *Oxford* in 1216. where Mention is made of both in the following expreſs Terms: "You "may raiſe Thunder and Lightning at Pleaſure, ſays that ex-"cellent Frier, by only taking Sulphur, Nitre, and Charcoal, "which ſingly have no Effect; but, mixed together, and con-"fined in a cloſe Place, cauſe a Noiſe and Exploſion, greater "than that of a Clap of Thunder."

But there is Reaſon to believe, that the Force of Gunpowder was known long before, and diſcovered by ſome Nations in very early Ages of the World, though not brought to the great Perfection it is in at preſent: And it is probable, that theſe People kept it as a Secret, either for their own Defence, or, perhaps, out of a more generous and humane Principle; that is, for Fear of the Miſchief it might do Mankind; or 'tis poſſible, that the Art may have been loſt and recovered again at different Periods of Time.

The *Chineſe* pretend to have had the Knowledge of Gunpowder long before the *Europeans*; and it ſeems very probable they had; for we have an Account in Hiſtory, that *Bacchus* was drove from the Siege of a Town in *India* by Thunder and Lightning: And we farther read of ſomething of the like Nature happening to *Alexander*, in his *Indian* Expedition. Now, if it be conſidered, that theſe two Conquerors penetrated at leaſt as far as the Borders of *China*, it will not ſeem unlikely, that this Thunder and Lightning was the Effect of Gunpowder, and that the *Chineſe* were acquainted with it before the Expedition of *Bacchus*; and this ſeems ſtill more probable, becauſe the *Eaſt-Indies* naturally afford vaſt Quantities of Nitre, or Saltpetre, without any artificial Preparation.

The Fable of *Salmoneus* ſays, that he attempted to imitate the Thunder and Lightning of *Jupiter*; and that *Jupiter*, for his Inſolence, killed him with real Lightning. The Conjecture does not ſeem far-fetched, if we ſhould ſuppoſe *Salmoneus* was acquainted with the exploding Property of Nitre, and to have play'd Tricks with it, in order to terrify his Subjects, and keep them in Awe; and the Circumſtance of his being killed with real Lightning, ſeems to confirm this; for it is eaſy to ſuppoſe, that *Salmoneus*, not thoroughly underſtanding the Danger of his artificial Lightning, might accidentally deſtroy himſelf therewith; and the People, ignorant of the Cauſe, might attribute it to *Jupiter*.

PYROLA.

The Characters are;

The Leaves are alternate; the Flower is roſaceous, pentapetalous, ſhaped like a Hat, with a recurvated Piſtil, and diſpoſed in a Spike; the Fruit is roundiſh, ſtriated, umbilicated, quinquecapſular, and full of ſmall Seeds.

Boerhaave mentions two Species of *Pyrola*; which are,

1. Pyrola; rotundifolia; major. *C. B. P.* 191. *Tourn. Inſt.* 256. *Boerh. Ind. A.* 278. *Pyrola.* Offic. J. B. 3. 94. Raii Hiſt. 2. 1223. Synop. 3. 363. Ger. 330. Emac. 408. *Pyrola noſtras vulgaris.* Park. Theat. 508. WINTER GREEN.

The Leaves of Winter Green do ſomewhat reſemble thoſe of the Pear-tree, but are hardly ſo large; they grow on Footſtalks, two or three Inches long, ſmooth, and of a firm Texture. The Stalks grow to be about a Foot high, bearing on their Tops ſeveral ſmall five-leaved white Flowers, having a few Stamina in the Middle, growing one above another in a looſe Spike, which are ſucceeded by cornered Seed-veſſels full of very ſmall Seed; the Root is ſmall, ſlender, and fibrous. It grows in Woods, in divers Parts of *England*, both north and weſt, and flowers in *July*.

The Leaves, which are the only Part uſed, and that not often, are cooling and drying, and a good Vulnerary, both for inward and outward Wounds and Haemorrhages, Ulcers in the Kidneys or Bladder, as, alſo, againſt making bloody Water, and the Exceſs of the Catamenia. *Miller's Bot. Off.*

2. Pyrola; rotundifolia; minor. *C. B. P.* 191. *Boerh. Ind. alt. Plant.*

Beſides the foregoing Species of *Pyrola*, *Dale* mentions the following;

Pyrola altera. Offic. *Pyrola folio mucronato ſerrato.* C. B. P. 181. Raii Synop. 3. 363. Tourn. Inſt. 256. *Pyrola folio ſerrato.* J. B. 3. 536. Raii Hiſt. 2. 1233. *Pyrola tenerior.* Park. Theat. 509. *Pyrola ſecunda tenerior Cluſii.* Ger. Emac. 408. SMALLER WINTER GREEN.

It is found in Woods, but it is ſomewhat ſcarce, and flowers in *June*. The Herb, which is of Uſe in Medicine, agrees in Virtues with the *Pyrola*; *rotundifolia*; *major*. *Dale.*

PYRONOMIA. The Art of regulating Fire in chymical Operations.

PYROPHAGUS. A Perſon who has the Art of ſwallowing Fire; a Trick very frequent among Mountebanks.

PYROPUS. A Ruby, or Carbuncle. It has ſome other Significations, which are foreign to Medicine.

PYROS, πυρός. Wheat.

PYROSIS, πύρωσις, from πῦρ, Fire. An intenſe Redneſs and Heat in the Face, ſuch as happens to Perſons travelling in exceſſive hot Weather.

PYROTECHNIA, from πῦρ, Fire, and τέχνη, Art. Chymiſtry.

PYROTICOS, πυρωτικός. Cauſtic.

PYRRHOCORAX, from πυῤῥὸς, red, and κόραξ, a Crow. The red Crow, a Bird of no Uſe in Medicine.

PYRRHOS, πυῤῥὸς, is, by all the Tranſlators, render'd *rufus*, rediſh; yet it ſignifies, alſo, *fulvus*, fallow, or a yellow Colour inclining to white, the ſame which we call flaxen; and is ſo commonly obſerved in the Hair of Boys and Youth, before the Years of Manhood. Thus *Galen*, *Lib.* 2. *de Temp.* and *Ariſtot. Quæſt. Nat.* write, that the *Germans*, *Illyrians*, *Dalmatians*, *Scythians*, and thoſe who inhabit cold and humid Countries, have πυῤῥὰς τρίχας, "yellowiſh or flaxen "Hair." The Difference between the τὸ πυῤῥὸν and the ξανθὸν, the *fulvum* and the *flavum*, or the pale and bright yellow, which ſeem to come neareſt their Signification in *Engliſh*, is thus ſtated by *Galen*, *Lib.* 1. *de Criſ.* ἐγγυτάτω τὴν φύσιν ἐν τὸ πυῤῥὸν χρῶμα τῷ ξανθῷ, &c. "The *Pyrrhos* (*fulvus*) comes "very near the *Xanthos* (*flavus*); but they differ, in that the "former is more inclining to Whiteneſs, and the other to Splen-"dor; for bitter Bile ſometimes appears *fulva* (πυῤῥὰ) of a "paliſh Yellow; ſometimes *flava* (ξανθὰ) of a bright Yellow; "and frequently of a pale Colour (ὠχρά): For while it is "whiter, and more turbid than ordinary, it is of the pale Yel-"low; but when it begins to brighten up, and be purified, it "becomes of a ſplendid or bright Yellow; for whatever is of an "igneous Quality, and ſparkles in Bile, renders it of a brighter "Yellow (ξανθότερον); and as much as the πυῤῥὸν (*fulvum*) "is whiter than the ξανθὸν (*flavum*), ſo much is the ὠχρὸν "(the *pallidum*, or pale) whiter than the πυῤῥὸν. And, again, "as much as the ξανθὸν is leſs white than the πυῤῥὸν, ſo much "is the ἐρυθρὸν (*erythron*, red) leſs white than the ξανθὸν." From hence we may infer, that the Colours ſignified by the Words *rufus* and *fulvus*, both comprehended under the *Greek* πυῤῥὸς, are a Mean between the *flavus*, ξανθὸς, and the *pallidus*, or pale, ὠχρὸς; as this laſt is a Mean between the ξανθὸς, *flavus*, and the λευκὸς, *albus*, the white. The Epithet of *fulvus* is variouſly applied by the *Latins*; as to Stars, Gold, (by *Virgil* called, alſo, *flavum*, as he uſes, alſo, *fulvum* for *flavum*) a Lion, Sand; and by *Hippocrates*, as ſignified by πυῤῥὸν, to the Sand diſcharged in nephritic Affections*. Πυῤῥὸν ὑδωρ, *ex Progn.* is rendered by *Celſus*, *Cap.* 6. *Lib.* 2. *Urina rubra*; and ὑποπυῤῥὸν, ſpoken of the Stools, by *rufus*, *Lib.* 2. *Cap.* 3. And, to mention no more Particulars, *Hippocrates*, *Lib.* 2. περὶ γυναικ. calls the Yolk of an Egg ὠὸν τὸ πυῤῥὸν.

PYRRHULA. See RUBICILLA.

PYRUS.

The Characters are;

It is taller, and more erect, than the Apple-tree; the End of the Pedicle runs into an oblong Ovary, whoſe upper Margin becomes a Crown, which is expanded like a Calyx, after the manner of a Star, into five Segments, and is hollow in the Centre; the Flower growing on the Ovary has five Petals, expanded like a Roſe, and ariſing from the Interſtices of the Segments of the Crown; it is, alſo, furniſhed with twenty, or more, Stamina, which, too, ariſe from the Edge of the Calyx; from the Centre of the upper Part of the Ovary are produced five Tubes, which terminate in a ſcabrous, orbicular Apex; and the Ovary itſelf becomes an oblong, turbinated, quinquecapſular, fleſhy, and umbilicated Fruit.

Boerhaave mentions but one Sort of *Pyrus*; which is,

Pyrus; ſativa. *C. B. P.* 439. *Boerh. Ind. A.* 2. 247. *Tourn. Inſt.* 628. *Park. Theat.* 1500. *Raii Synop.* 3. 452. *Pyrus.* Offic. Raii Hiſt 2. 1450. Ger. 1267. Emac. 1455. J. B. 1. 35. THE PEAR TREE.

This is a Tree very well known to every Body, and of which there are ſeveral Kinds and Varieties cultivated in Gardens.

* *Galen*, on this Place, ſuppoſes, that by πυῤῥὸς, here *Hippocrates* is to be underſtood of all the Colours between pale and yellow, which have any Mixture of White or Red; ſuch as the ὠχροξανθον, ἐρυθροξανθον, or ξανθολευκον; ſince the Sands, or other Subſtances which ſubſide in Urine, are varied, according to the Colour or Quality of the Blood.

The Fruit is generally cooling and reſtringent; but as I know not of any medicinal Uſe they are put to, I ſhall forbear ſaying any more about them. *Miller's Bot. Off.*

PYTAHAIA. The Name of an *Indian* Tree, which grows in rocky Soils, bearing a red Fruit as large as an Orange, in Taſte like a Pomegranate.

PYTHON. A Serpent celebrated for Sharpneſs of Sight, large Eyes, and a triple Row of Teeth.

PYULCUM, πυελκὸν, from πύον, Pus, and ἕλκω, to draw out. An Inſtrument for extracting Pus out of deep Sinuſes; perhaps a *Canula*.

PYXACANTHA. A Name for the LYCIUM.

PYXINUM COLLYRIUM. The Name of a *Collyrium* deſcribed by *Celſus*, *Lib.* 6. *Cap.* 6. *Sect.* 25.

PYXIS. The Name of an *Acopon*, deſcribed by *Paulus Ægineta*, *Lib.* 7. *Cap.* 19.

PYXIS EMPLASTRUM. A Plaiſter deſcribed by *Aetius*, *Tetrabib.* 4. *Serm.* 3. *Cap.* 14.

PYXIS, in Anatomy, is the ACETABULUM. *Os Pyxidis* is the *Os Occipitis*. It is, alſo, a Surgeon's Box, divided into Compartments, for containing various Sorts of Salves, or Unguents.

Q.

Q. For the Signification of this Letter in the Chymical Alphabet, ſee *Alphabetum Chymicum*. Q. or q. in Preſcriptions, imports Quantity.

QUADRAGESIMUS DIES. The fortieth Day. The Antients fixed upon this Day as the laſt to which acute Diſtempers could extend; calling all thoſe chronical, which continued longer. I have, however, ſeen an acute Diſorder continue ſixty Days.

QUADRANS. The fourth Part of a Pound, that is, three Ounces.

QUADRANTAL. The ſame as AMPHORA.

QUADRATUS imports plump. But *Quadratus* is the Name of ſeveral Muſcles. Thus there is the *Quadratus Genæ*, ſee CAPUT. And the *Pronator Quadratus* of the *Ulna*, and *Radius*. See PRONATOR.

QUADRATUS FEMORIS. This is a ſmall flat fleſhy Muſcle, of the Figure of an oblong Square, from whence it has its Name. It is ſituated tranſverſly between the Tuberoſity of the Iſchium and the great Trochanter.

It is fixed by one Extremity along that obtuſe Line which runs from under the Acetabulum toward the lower Part of the Tuberoſity of the Iſchium; from thence it runs directly toward the great Trochanter, and is inſerted in almoſt all the lower Half of the oblong Eminence in that Apophyſis, but principally in the ſmall Riſing, or Tuberoſity, in the middle of that Eminence.

This Muſcle, the *Pyriformis*, and *Gemelli*, called, alſo, by the common Name of *Quadrigemini*, are Congeneres in their Uſes; and theſe have been confined by Anatomiſts to the Rotation of the Os Femoris about its Axis from before outwards: But this Uſe they cannot have, except when we ſtand, or lie at full Length: For, in ſitting, or when the Thigh is bent in any other Poſture, they carry the Thigh outward, or ſeparate the two Thighs from each other, when bent.

All the four co-operate in theſe two Uſes, of Rotation and Abduction; but they co-operate equally or unequally, according to the different Degrees of the Extenſion or Flexion of the Thigh. For Inſtance, when we ſtand ſtrait up, they all perform the Rotation equally; but if the Thigh be then carried a little forward, the *Pyriformis* is more in Action than the *Quadratus*; and if the Thigh be carried backwards, the *Quadratus* acts moſt.

Theſe Muſcles, by means of their Adheſion to the orbicular Ligament of the Joint of the Hip, may, likewiſe, ſerve to hinder that Ligament from being ſqueezed between the Bones, in the different Motions of the Thigh.

QUADRATUS LUMBORUM, SIVE LUMBARIS EXTERNUS.

This is a ſmall, oblong, flat Muſcle, irregularly ſquared, narrower at its upper than at its lower Part, lying along the Sides of the Vertebræ Lumborum, between the laſt falſe Rib and the Os Ilium.

It is fixed below to the external Labium of almoſt all the poſterior Half of the *Criſta Oſſis Ilium*, to the *Ligamentum Sacro-Iliacum*, and a little to the Os Sacrum, by a fleſhy Plane, the Fibres whereof run obliquely backward.

From thence it runs up between the Sacro-Lumbaris and Pſoas, by both which it is partly hid, and is inſerted in the Extremities of all the tranſverſe Apophyſes of the Loins by oblique tendinous Digitations. It is, likewiſe, fixed by a broad Inſertion, in the twelfth Rib, on the Inſide of the Ligament

that lies between it and the *Longiſſimus Dorſi*, by which that Rib is connected to the firſt Vertebra of the Loins.

I have obſerved, likewiſe, a ſmall *Lumbaris Externus* adhering very cloſely to the back Side of the *Quadratus*, and fixed by tendinous Digitations to the Extremities of the ſecond, third, and fourth tranſverſe Apophyſes of the Loins; from thence its fleſhy Fibres run up obliquely over the *Quadratus*, and then mix with it at its Inſertion in the laſt falſe Rib.

The *Quadratus Lumborum*, and *Pſoas Parvus*, are of the ſame Uſe to the Vertebræ of the Loins, as the *Scaleni* to thoſe of the Neck; when both *Quadrati* act, they keep the Lumbar Pillar ſtrait, that is, ſo as not to incline to either Side; and then they may aſſiſt the *Recti* of the Abdomen in the Inflections forward, and the ſuperior Portions of the *Obliqui* in lateral Inflections.

They may, likewiſe, ſerve to ſupport the Haunches alternately in walking; and, in ſtanding on one Foot, the *Quadratus* of the oppoſite Side may ſupport the Haunch on that Side, in which Action they co-operate with the *Tranſverſo-ſpinales*, and poſterior Parts of the *Obliqui Abdominis*. *Winſlow's Anatomy.*

QUADRIFOLIUM. A Name for the *Trifolium*; *quadrifolium*; *hortenſe album.*

QUADRIGEMINI MUSCULI. Four Muſcles, which aſſiſt in moving the Thigh-bone, are thus call'd; the *Pyriformis*, *Gemellus ſuperior*, *Gemellus Inferior*, and *Quadratus*.

QUADRUPES. A Quadruped. That is, an Animal furniſhed with four Feet.

QUAUHYYAC OCUILENSIUM. *Nieremberg.* The Name of a very large *Indian* Tree, bearing Leaves reſembling thoſe of the Citron. The Bark is aſtringent, heating, drying, and of a ſtrong Smell: It reſtrains a Diarrhœa, and excites a Sweat. The Juice, ſnuffed up the Noſe, cauſes Sneezing, purges the Head, and thus removes Fevers, and Pains in the Head; for which Reaſons, it is preſerved in Families, as a popular Remedy. *Raii Hiſt. Plant.*

QUAMOCLIT.

The Characters are;

The Root is annual; the Stalk voluble, and ſcandent; the Flower monopetalous, funnel-ſhaped, and multifid; and the Fruit like that of the *Convolvulus*.

Boerhaave mentions two Sorts of *Quamoclit*; which are,

1. Quamoclit; foliis tenuiter inciſis & pennatis. *T.* 116. *Convolvulus*, *pennatus*, *exoticus*, *varior*, *Quamoclit.* Col. 1. Obſerv. 72. *Jaſminum*, *Milleſolii folio.* C. B. P. 398.

2. Quamoclit; Americana; folio Hederæ; flore coccineo. *Commel. Rar.* 21. *Boerh. Ind. alt. Plant.*

The *Hiſt. Plantarum*, aſcribed to *Boerhaave*, informs us, that it is cathartic, like the *Convolvulus*.

QUANDROS. The Name of a white Gem, ſaid to be found in the Brain of a Vultur. It is ſaid to increaſe Milk in the Breaſts; but the Virtues, and the Thing itſelf, ſeem to be equally fabulous.

QUANLI. Lead. *Rulandus.*

QUAQUILA. The COTURNIX.

QUARTANA FEBRIS. A Quartan, or Ague.

Among the Intermittent Fevers, a Tertian is, both with reſpect to Violence, and Obſtinacy, ſurpaſſed by that which ſeizes every fourth Day, with two entire Days of Intermiſſion, and is called a Quartan Fever.

This

This Diſorder generally, in the Afternoon, about Four or Five o' Clock, and ſometimes ſooner, or later, ſeizes the Patient with a conſiderable Languor of the Body, a Pandiculation, and a heavy Pain of the Head, Back, Loins, and Legs; then the Hands and Feet become cold, the whole Body pale, the Countenance and Nails livid; after which ſucceeds the Horror and Rigor familiar to this Species of Fever: The Tongue and Lips tremble, the Breathing is difficult, the Præcordia are uneaſy, the Body is reſtleſs, and the Pulſe contracted, hard, and ſometimes unequal: All theſe Symptoms laſt generally for two or three Hours, during which time, moſt Patients are coſtive; whereas, in ſome, there is a Stimulus to diſcharge the Fæces and Urine; and, in others, eſpecially old Perſons, there is an Effort to vomit, a real Vomiting, and a Diſcharge of the Excrements. In many Patients, alſo, eſpecially thoſe far advanced in Years, the Head is ſurpriſingly diſturbed, and ſuch an Alienation of Mind brought on, that the Perſon ſpeaks many incoherent Things; then ſucceeds, ſlowly, a Heat, which though not very intenſe, is, yet, troubleſome, on account of the Dryneſs of the Skin, with which it is accompanied: Then the Rigor is removed, and the Pulſe becomes equal, quicker, and larger; There remains, however, an obtuſe Pain of the Head, accompanied with a Vertigo; and, at laſt, the Skin becomes moderately moiſt, till, after four or ſix Hours, the Heat, and other Symptoms, diſappear, when the Paroxyſm of the Fever is removed. Though the Patient, on the two Days of Intermiſſion, generally gets out of Bed; yet he is afflicted with a certain Senſe of Pain in his Limbs and Feet, the Bones of which ſeem, as it were, to be bruiſed, or oppreſſed, with a great Weight. In moſt Patients there is, alſo, a Senſe of Weight in the Head, and a certain preternatural Uneaſineſs of Mind. The Urine, alſo, which, during the Paroxyſm, was thin and aqueous, is now thick, and depoſites a Sediment.

The Symptoms which appear under the Paroxyſm, ſufficiently evince, that, in a Quartan Fever, the whole nervous Syſtem is affected, and ſpaſmodically conſtricted; ſo that the proximate and immediate Cauſe of this Diſorder muſt, undoubtedly, conſiſt in an univerſal and violent ſpaſmodic Stricture of the nervous Parts; which, proceeding, principally, from the ſpinal Marrow, preternaturally affects not only the Coats of the Veſſels, but, alſo, the whole Nerves and Fibres; by which means, the Motion of the Solids and Fluids is greatly diſturbed.

The material Cauſe which throws the nervous Parts into ſuch exorbitant Commotions, was, by the Antients, thought to be an extravaſated, putreſcent, melancholic Humour: But as in all Fevers, ſo, alſo, in a Quartan, there is an active Matter, poſſeſſed of a cauſtic Acrimony, ſtimulating the internal highly-ſenſible Parts to ſpaſmodic Contractions: Yet, becauſe this Matter is mixed with the pancreatic Juice, which has ſomewhat of an acido-viſcid Quality, it affords a conſiderable Reſpite, is not ſo ſoon collected, nor ſo quickly conveyed from the Primæ Viæ to the Membranes of the ſpinal Marrow: For when it is in a ſufficient Quan ity collected in the Primæ Viæ, and ſucceſſively enters the Maſs of Blood, being, at certain ſtated Periods, conveyed to the Membranes of the Spine of the Back, it excites thoſe febrile Commotions ſpecified under the Article TERTIANA FEBRIS.

If we inveſtigate the Origin of this febrile Matter, we ſhall find, that it proceeds from a ſlow Circulation of the Blood through the depuratory and ſecretory Viſcera of the Abdomen, eſpecially the Liver, Spleen, and Pancreas, and a ſucceeding Infarction and Obſtruction of theſe; for, by this means, the fermentative, gaſtric, lymphatic, and ſalival Humours loſe their temperate, ſubtil, and ſpirituous Quality, and aſſume a fixed and acid Nature; ſo that they become leſs fit for the intimate Diſſolution of the Aliments, and the Extraction of the Chyle, but produce a large Quantity of acid and viſcid Crudities; and theſe Crudities, in Proceſs of time, contracting a worſe Quality, and other external Cauſes, inducing Acrimony, concurring, a Quartan Fever is at laſt produced.

That the languid Circulation of the Blood through the abdominal Veſſels, is the Cauſe of this Diſorder, is ſufficiently obvious, from this, that Quartan Fevers are moſt incident to Adults, and thoſe advanced in Years; to Perſons of melancholic Habits, and thoſe who have contracted not only a Redundance, but, alſo, a Spiſſitude, and Impurity of the Juices, in conſequence of a ſedentary Life, an Intermiſſion of uſual Veneſection, coarſe unſalutary Food, an exceſſive Uſe of acid and ſpirituous Liquors, a Suppreſſion of uſual critical Evacuations of Blood, or immoderate Paſſions. That the peccant Matter is of a cauſtic Quality, is certain, from this, that Quartans generally appear in the Autumn, after the acrid Sordes are excluded from the Body by the Heat of the Summer; that they are ſometimes terminated by the Itch, or Purples; that they return when theſe are repelled; that they are removed upon the Eruption of the Small Pox; that they are generated by Tertians; that they terminate in Tertians; and that, like Tertians, they are very epidemic in marſhy Places, where the Air is impregnated with a large Quantity of acrid Recrements.

Quartan Fevers are of different Sorts, ſince ſome are of the ſimple, and others of the double Kind. The ſimple is that already deſcribed; but a Quartan is ſaid to be double, when, within four Days, two ſucceeding Paroxyſms happen, in ſuch a manner, that each preſerves its proper Type, and peculiar Time of Acceſſion, alternately correſponding to the preceding Paroxyſm, and the third Day, only, being totally free from the Fever. This frequently happens when a ſimple Quartan is prepoſterouſly cured, or when any Error in Regimen is committed.

Quartans are, alſo, either legitimate, or ſpurious. The former obſerves its Period of Return, which is the Afternoon, more exactly than any other Species of Fevers; but a ſpurious Quartan has not a certain Period for its Return, which, however, is generally in the Forenoon. The Heat, alſo, is greater, and afflicts the Patient more, than the cold Fit.

Sometimes every fourth Day the Paroxyſm returns, after previous Pandiculations and Horripilation, but does not very exactly obſerve its Period; nor, when the Paroxyſm abates, does it totally intermit, but is only milder on the intermediate Days, than on that in which the Paroxyſm happens: The Heat is, alſo, preternaturally intenſe, the Pulſe increaſed, the Appetite languid, the Strength low, the Mouth dry, the Head giddy, the Sleep reſtleſs, the Urine red, thick, and with a high-coloured Sediment; for which Reaſon, it is, by Phyſicians, called a continual Quartan.

Quartan Fevers are generally epidemical, eſpecially after an exceſſively hot and dry Summer, in conſequence of which, a large Quantity of acrid and bilious Recrements are generated in the Body. An Inſtance of this is mentioned by *Sennertus*, in *Lib.* 2. *Cap.* 20. as happening in the Year 1606. *Bartholine*, *in Centr. Hiſt. Anat.* 95. mentions the ſame as happening in the Year 1652; and I can, from Experience, affirm, that the like happened in the Years 1684, 1719, 1726, and 1728. And becauſe, in conſequence of the exceſſive Heat, large Quantities of cold aceſcent Liquors are often drank, and the cold Night Air acts upon the Body, the Perſpiration of the acrid Sordes is obſtructed, and the Blood and Humours inſpiſſated.

Quartan Fevers are epidemical in ſome Countries, and Parts of the World; ſuch as *Weſtphalia*, *Pomerania*, and other Northerly Climates, whoſe Inhabitants uſe heavy, coarſe, and crude Aliments; for, almoſt every Autumn, long-protracted Quartans rage very much in theſe Parts. The ſame thing happens in marſhy Countries, and Places whoſe Atmoſphere is impregnated with noxious Exhalations; in which Tertians are very frequent in the Spring, and Quartans in the Autumn; and the Patients are often ſubject to Relapſes, in both Caſes.

Quartans are of different Kinds, according to the Diverſity of the Patients they ſeize; for when they happen to Perſons who, in Conſequence of a ſedentary Life, or the Uſe of coarſe and heavy Aliments, contain a large Quantity of thick Blood, to thoſe afflicted with the hypochondriacal Diſorder, or who have long indulged themſelves in Grief, they are generally obſtinate, and dangerous: For which Reaſon, great Care, with reſpect to Regimen, is requiſite in the Patient, and great Judgment in the Phyſician, with reſpect to Medicines. When Quartans happen in cacochymical Conſtitutions, or in Perſons where the Matter of the Purples lies latent in the Blood, they are accompanied with more terrible Symptoms, and the Strength is more impaired; the Patient is, alſo, afflicted with Watching, Alienation of Mind, an Anxiety of the Præcordia, and, at laſt, the Purples appear; and when theſe are by any Cauſe, however ſlight, repelled, the febrile Paroxyſms are increaſed, and afflict the Patient more violently.

Quartans, in Patients whoſe Strength is exhauſted by old Age, Indiſpoſition, a bad Regimen, or exorbitant Paſſions, eaſily degenerate into continual Fevers, which are known from a Languor of the Strength after the Paroxyſm, the Frequency of the Pulſe, the ſlow Heat, and the Loſs of Appetite; which Symptoms place the Patient in conſiderable Danger. When Quartans, after hot Summers, ſeize young and vigorous Perſons, the Paroxyſms laſt long, the burning Heat terminates in a profuſe Sweat, and the Thirſt, and Languor of the Stomach, are greater than in other Patients. As Infants and Children with Reluctance take Medicines, do not obſerve the Rules of a proper Regimen, catch Cold by throwing the Bed-cloaths off them in the Night, and have not only a lax Habit of Body, fit for retarding Perſpiration, but, alſo, Stomachs fit for collecting Crudities, ſo they are long afflicted with Quartans, more frequently ſubject to Relapſes than others, or afterwards expoſed to the Attacks of other Diſeaſes.

Quartan Fevers are, however, generally pretty ſafe, and rarely prove mortal, except in old Perſons, thoſe whoſe Strength is exhauſted, thoſe of tender Conſtitutions, or ſubject to epileptic Fits, or when the Fever has not only been excited, but

augmented, by the Paſſions of the Mind; or when ſuch a Fault is committed, either by the Patient or Phyſician, that the Quartan paſſes into a Quotidian, or ſome chronical and fatal Diſorder.

The Safeneſs, however, of Quartan Fevers, ſcarcely attones for their Violence and Obſtinacy; for they are generally long protracted, and often prove the Reproach of the Phyſician, becauſe they elude the Force of his beſt-choſen Remedies. This principally happens in ſuch Quartans as ariſe in the Autumn, and continue throughout the Winter; for theſe are rarely removed till the Vernal Solſtice; at which Time, the Pores being opened, and the Juices attenuated, by the Serenity of the Air, they generally diſappear ſpontaneouſly. Quartan Fevers are, alſo, highly obſtinate, when the Diſorder is deeply rooted in the Viſcera, eſpecially the Liver, Spleen, and Pancreas; or when the whole Maſs of Humours is contaminated, and impure, or the nervous Syſtem exceſſively weak, and diſpoſed not only to conceive, but, alſo, to cheriſh ſuch anomalous Motions; and eſpecially when the Patient, by his Voracity, continually collects and increates the Matter of the Fever.

When, on the contrary, a Quartan happens in the Spring, or Summer, it is more eaſily cured, ſince the Temperature and Serenity of the Air greatly contribute to its Removal: Quartans, alſo, ariſing from irregular Living, or Crudities collected in the *Primæ Viæ*, whilſt, at the ſame Time, the Viſcera are ſound, as, alſo, Quartans ariſing from a Suppreſſion of Tranſpiration, are eaſily cured, and often happily removed, by one Vomit, or one Doſe of ſome proper diaphoretic Medicine, exhibited before the Paroxyſm: Thoſe Quartans are, alſo, eaſily cured, unleſs through ſome Fault of the Patient, or Phyſician, which ſeize young and vigorous Perſons; eſpecially if they rather proceed from Bile, than from an acid and tenacious Humour, which principally happens in ſuch epidemical Quartans as rage in the Summer.

Nor is an anomalous Quartan, which does not retain its Type, returns at uncertain Periods, or paſſes from the ſimple to the double Kind, ſo dangerous as it is commonly thought; for theſe Circumſtances are Signs that the peccant Juices are not very tough, and deeply impacted in the Viſcera; but that they are ſtill diſpoſed to Motion, and that Nature makes ſome Efforts for eliminating the Matter which produces the Diſeaſe: Beſides, the due Return of the Paroxyſms contributes greatly to diſſolve the viſcid, and diſcuſs the ſtagnant Humours. So that the more frequently theſe Paroxyſms recur, the ſooner the Cauſe of the Fever is removed, and, by the Aſſiſtance of Nature, the Cure perfected by a few proper Medicines.

Though a Quartan has generally no critical Excretion, yet it is ſometimes happily terminated, by an Eruption of Puſtules, Spots, ſmall Ulcers, and the Itch, all over the Body; as, alſo, by the haemorrhoidal Diſcharge. In Children I have, alſo, ſeen Quartans terminate ſucceſsfully in the Small Pox; and I have found, that pregnant Women, labouring under Quartans, have not got rid of them till after the Delivery; at which Time, the Infants have been affected with the ſame Diſorder.

Quartan Fevers are ſometimes highly beneficial, not only in preventing, but, alſo, in removing other Diſorders, thoſe eſpecially of a chronical Kind: For the increaſed Motion of the Solids and Fluids, under the Paroxyſm, attenuates the tough Juices, forces them from their Seats, and greatly contributes to remove thoſe old Obſtructions, which are deeply ſeated in the minute Veſſels, Glands, and nervous Parts. Hence the moſt skilful of the antient Phyſicians, ſuch as *Hippocrates*, *Aſclepiades*, *Galen*, and *Celſus*, affirm, that they looked upon Quartan Fevers as Remedies for ſome other Diſorders; and they are certainly of ſingular Efficacy in removing hypochondriac Symptoms. *Hippocrates*, *in Lib. 6. Epidem.* highly extols Quartans, as beneficial in Epilepſies and convulſive Motions. Practical Authors have furniſhed us with Inſtances, in which convulſive Aſthmas, the Stone, and Gout, have been happily removed by the Courſe of a Quartan Fever, duly and skilfully treated. *Aulus Gellius*, in his *Noct. Attic. Lib.* 17. *Cap.* 12. informs us, from *Plato*, that Quartan Fevers not only free the Patient from Diſorders of the Viſcera, but, after their Removal, leave the Body ſtronger, ſo that they are not, for the future, ſo ſubject to other Diſorders, or Relapſes into the ſame. I myſelf have, alſo, known many live to a great Age, after Quartan Fevers. Hence we cannot enough admire the Bounty of indulgent Heaven, which has given an inconparable medicinal Virtue to ſome Diſeaſes ſeemingly the moſt deſtructive of Health.

But when Quartans are protracted too long, the Juices conceive a Dyſcraſy; and, if the Humours are thin and bilious, the Purples appear, or the ſpirituous, roſcid, and nutritive Parts, being diſſipated, the remaining Fluids become tough, are corrupted, and bring on chronical Diſorders. Quartans, ill treated, degenerate into violent and fatal Diſorders; ſuch as a Dropſy, an Anaſarca, an Aſcites, a ſcorbutic Cachexy, oedematous Tumors, ſlow and hectic Fevers of the continual Kind, a dry Aſthma, a Jaundice, a Chin-cough in old Perſons, comatous Diſorders and Hemiplegies; in young Perſons, the hypochondriac Diſorder; and, in Infants, violent Convulſions, which miſerably diſtort the Spine of the Back, together with other Parts, both in the anterior and poſterior Regions of the Body: And, in all theſe, after Death there is found ſome conſpicuous Fault of the Viſcera, eſpecially of the Liver, Spleen, and Pancreas; together with an Infarction, Obſtruction, and Corruption of the meſeraic Glands.

They who are taken off by a Quartan Fever, die under the Rigor of the cold Fit, and an uncommon Perturbation of Mind. On this Occaſion, as I have obſerved in two Adults, the Violence of the Spaſms is ſo increaſed, that no Degree of Heat ſucceeds, whilſt Symptoms, plainly reſembling thoſe produced by Poiſon, appear, and, at laſt, deſtroy the Patient: And, in Infants, the ſpaſmodic Strictures manifeſtly degenerate into fatal convulſive Motions.

After a Recovery from a Quartan Fever, the Patient ought, for ſome Time, carefully to obſerve a due and proper Regimen; for this Species of Fever eaſily recurs, and, upon the ſlighteſt Occaſion, reſumes its former Tenor. Thoſe who, having ſurmounted a Quartan, indulge themſelves in Gluttony, and overload their extenuated Bodies with a large Quantity, eſpecially of unſalutary Aliments, eaſily relapſe, in Conſequence of a freſh Collection of Crudities in the *Primæ Viæ*. The ſame Misfortune is incident to thoſe who have their Perſpiration obſtructed, expoſe their Bodies to the cold and moiſt Air, or drink large Quantities of cold Liquors when they are exceſſively hot: Thoſe, alſo, who have been long under the Influence of violent Paſſions, eſpecially exceſſive Grief, eaſily relapſe into Quartans. It, alſo, happens, though more rarely, that Quartans, which had ceaſed upon the Expulſion of the peccant Matter to the Surface of the Body, either under the Appearance of the Itch, Puſtules, Ulcers, or Purples, forthwith return, when theſe are repel'd.

The General Method of Cure.

In the Cure of a Quartan, the following Intentions are to be purſued.

1. The viſcid, acid, and bilious Crudities, gradually conveyed from the *Primæ Viæ* with the Lymph and Chyle to the Blood, and exciting febrile Commotions in the nervous Syſtem, are to be corrected, and evacuated, by proper Emunctories.

2. The Circulation of the Blood through the abdominal Viſcera, eſpecially thoſe to which the *Vena Portæ* is diſtributed, is to be render'd free and uninterrupted, whilſt the Congeſtion, Infarction, and Obſtruction, are to be removed; or, at leaſt, their Increaſe prevented.

3. The violent ſpaſmodic Conſtriction of the nervous Syſtem, which is the Cauſe of the terrible Symptoms, is to be allayed, and mitigated. And,

4. The impaired Strength of the Viſcera, Stomach, and nervous Parts, is to be reſtored; by which means, not only future Paroxyſms, but, alſo, a Relapſe, are prevented.

The firſt of theſe Intentions is anſwered by all thoſe Remedies which obtund Acids, incide tough Juices, correct ſuch as are acrid, and cleanſe the *Primæ Viæ*. Of this Claſs, the moſt conſiderable are, alcaline Medicines, ſuch as the Salts of Plants prepared by Incineration, eſpecially the Salts of Wormwood, and Carduus Benedictus: Neutral Salts are, alſo, excellent, for anſwering this Intention, eſpecially depurated Sal Ammoniac, the *Terra ſoliata Tartari*, and the digeſtive Salt of *Sylvius*; to which, in order the more effectually to correct the bilious Acrimony, we are to add gentle Abſorbents, ſuch as Crabs-eyes, Egg-ſhells, and Hartſhorn, prepared without Fire. But if the Intention is to evacuate theſe Crudities, the Salts obtained from medicinal Springs, ſuch as thoſe of *Egra*, *Epſom*, and *Sedlitz*, exhibited in a large Doſe, or the *Sedlitz* Waters by themſelves, eliminate the thickeſt of them by Stool, whilſt tartareous Medicines efficaciouſly carry off the more ſubtile ſalino-ſulphureous *Sordes* by Urine. In Quartan Fevers, the *Magneſia Alba* is, alſo, poſſeſſed of a purgative Quality, ſince, by abſorbing the Acid of the *Primæ Viæ*, it is converted into a bitter Salt, reſembling that of *Epſom*.

The ſecond Intention is excellently anſwered by bitter Subſtances, which, by their fixed balſamic Sulphur, reſtore the Balſam of the Bile, obtund acid and ſaline Humours, and procure a certain mild ſpirituous Quality to the Juices: Such are the bitter Extracts of Fumitory, Wormwood, Carduus Benedictus, red Gentian, Marſh Treſoil, and the leſſer Centaury; the Eſſence or Extract of Rhubarb; and the Pilulæ Balſamicæ, prepared according to the Directions of *Becher*, of well-depurated Aloes, bitter Extracts, reſinous, balſamic, and temperate Gums; which, beſides their laxative, have, alſo, an attenuating Quality, eſpecially if they are taken alternately with the above-mentioned Salts. This Intention is, alſo, anſwered by a due Uſe of hot and cold medicinal Waters, in Conjunction with

a proper Regimen: But if an inveterate Obſtruction of the Viſcera, eſpecially of the Pancreas, which, in obſtinate Quartans, is highly pernicious, cannot be removed by mild Medicines, more penetrating and active Preparations of the mineral Kind are to be uſed, ſuch as *Mercurius Dulcis*, the *Diaphoreticus Solaris* prepared in the manner directed under MERCURIUS, and the *Antiquartanum* of *Riverius*, which is prepared of Mercury, Antimony, and Gold, by frequently abſtracting from them Aqua Regia, and then kindling Spirits of Wine upon them; and, among antimonial Preparations, medicinal Regulus of Antimony, the *Panaceas* of *Glauber* and *Conerdingius*; as, alſo, my Sulphur of Antimony, corrected and prepared without a Precipitation with an Acid.

The third Intention, which is to allay the ſpaſmodic Strictures of the nervous Syſtem, is anſwered, firſt, by antiſpaſmodic nervous Liniments, conſiſting of human Fat, the Oils of Spike, Lavender, Rue, and Sage, together with *Peruvian* Balſam, applied, with briſk Frictions, to the ſpinal Marrow. Secondly, By Clyſters prepared of nervous, carminative, and antiſpaſmodic Herbs, with the Addition of a ſufficient Quantity of demulcent Oils. Thirdly, By Baths of ſweet Water, which were, by the Antients, principally uſed, before the Acceſſion of the Paroxyſm. And, fourthly, By Epithems and Liniments prepared of ſpirituous and aromatic Subſtances, and applied to the epigaſtric Region under the Horror and Rigor of the Fever.

The fourth and laſt Intention of Cure is excellently anſwered, by all bitter Subſtances, which are, at the ſame time, poſſeſſed of a certain balſamic and aſtringent Quality: The moſt conſiderable of this Kind are, *Peruvian* Bark, the Barks of Caſcarilla, Capers, Tamariſks, and Cinnamon; the Shavings of red Sanders, and the Eſſences extracted from bitter Plants; which, when quickened with ſome proper chalybeate Liquor, are highly efficacious. But my antifebrile Electuary, directed in the Article *Tertiana Febris*, is, of all others, the moſt effectual.

In Quartans, great Relief is, alſo, afforded, by applying to the Wriſts ſome Plaiſters; ſuch as that to which *Strobelbergerus* gives the Name of *Emplaſtrum famigeratiſſimum*: Theſe Plaiſters may be prepared of ſuch Subſtances as, by their aromatic and balſamic, as well as irritating Principle, add a certain Motion and Stimulus to the Fibres, ſo that they diſlodge the Matter deeply impacted in the nervous Parts, and, on the Day of Intermiſſion, render the Circulation of the Blood quicker.

Beſides theſe Remedies againſt Quartans, I ſhall ſubjoin two others, which I formerly found of ſingular Efficacy in *Weſtphalia*: The one is a vinous Infuſion, which anſwers all the Intentions of Cure, and of which a large Draught ought to be drank every Morning. It is prepared thus:

Take of the fibrous Roots of black Hellebore, of Polypody of the Oak, and of Sena-leaves, without the Stalks, each one Ounce; of Wormwood, the leſſer Centaury, Carduus Benedictus, and Marſh Trefoil, each half a Handful; of the Shavings of Snake-wood, of *Peruvian* Bark, and recent Orange-peel, each three Drams; of the Filings of Steel, and the *Tartarus Tartarizatus*, each half an Ounce: Cut down and bruiſe all theſe together, ſprinkle them with two Drams of the urinous Spirit of Sal Ammoniac: Mix and infuſe in two Quarts of Wine.

The other is the following Powder:

Take of *Peruvian* Bark, three Drams; of medicinal Regulus of Antimony, two Drams; of Mercurius Dulcis, (which is not to be triturated with the Powder, on account of the Salts, but only mixed with the Point of a Knife) of the fineſt Crocus of *Mars*, and Arcanum Duplicatum, each one Dram; and of the Oil of Mint, four Drops: Make up into a Powder, of which half a Dram, or a Dram, may be reduced to the Form of an Electuary, with Rob of Elder, or Julap of Roſes, and exhibited every Morning and Evening.

And, certainly, this Powder is of ſingular Efficacy in a Quartan deeply rooted in the Viſcera; but it is only fit for robuſt Habits, and ought to be accompanied with a due Regimen: For though it ſometimes excites a gentle Salivation, which proves uneaſy, yet it ſucceeds ſo well, as to remove obſtinate Quartans.

PRACTICAL CAUTIONS, AND OBSERVATIONS.

Quartan Fevers are ſo obſtinate, that they call for Patience in thoſe who labour under them, and due Expectation in him who undertakes the Cure, eſpecially when they happen in melancholic Conſtitutions, old Perſons, thoſe ſubject to hypochondriac Diſorders, thoſe in whom the Circulation of the Blood through the meſeraic Veins is ſlow, thoſe whoſe Viſcera are infarcted, or when they happen about the middle of the Autumn; for, in the Cure of theſe Fevers, the Phyſician is not to act haſtily, or attempt the Relief of the Patient by violent and draſtic Medicines, for fear of doing more Harm than Good.

In the Beginning of the Diſeaſe, if the Patient is robuſt, and vigorous, Medicines of a pretty powerful, reſolvent, colliquating, and evacuating Quality, are to be uſed; but when the Diſeaſe is of long ſtanding, the Patient tender, and of a delicate Conſtitution, and a large Quantity of bilious and acrid Recrements are in the Body, the Fever is ſurpriſingly increaſed by ſuch Medicines, and frequently paſſes from a ſimple to a double Quartan, or to a Quotidian: But temperate Subſtances, rather of the dietetic, than of the pharmaceutic Kind, are to be uſed in Conjunction with ſuch Things as allay the Spaſms of the nervous Syſtem.

Every Quartan, however, is not ſo obſtinate as not to yield even to the gentleſt Medicines; for I have known many happily cured of this Diſorder, only by the Uſe of a temperate balſamic Elixir, prepared with an aqueous Lixivium of bitter Extracts and Rhubarb, with an Addition of a ſufficient Quantity of *Hungarian* Wine: Others have been freed from Quartan Fevers by frequently taking Oil of Tartar per Deliquium, in ſome proper Liquor, drinking old Rheniſh Wine, with or without Bitters, immediately before the Paroxyſm, and afterwards uſing violent Exerciſe. Some have, alſo, been cured of Quartans by the daily Uſe of Baths of ſweet Water, and uſing ſuch a Degree of Exerciſe as to produce Sweat immediately before the Paroxyſm.

But Quartans are moſt happily and eaſily cured, when the State of the Weather is favourable, or when the Air is pure, ſubtile, and rarefied, as it is in the Spring, and ſerene Summers; for, in ſuch Seaſons, long-ſtanding Obſtructions of the Viſcera are more quickly removed, the Toughneſs of the Juices more ſpeedily colliquated, and the acrid Sordes more expeditiouſly eliminated through the open cutaneous Pores, by an equable and conſtant Perſpiration. I have known ſome who could not poſſibly be cured of Quartans, till they removed to a more healthy Part, or uſed another Regimen and Method of Life.

As in all chronical Diſorders, ſo, alſo, in the Decline of quartan Paroxyſms, 'tis expedient to change the Patient's Drink, and exhibit Decoctions prepared of the Roots of Sarſaparilla and Succory, the Herb Carduus Benedictus, Raiſins, and Fennel-ſeeds; and ſuch Decoctions are not only to be drank cold inſtead of Ale, but, alſo, warm inſtead of Tea. In Quartan Fevers 'tis, alſo, proper to uſe temperate mineral Waters, ſuch as the *Selteran* Springs; for theſe, when drank with one half, or a third Part of Wine, produce an highly ſalutary Effect in diluting the thick Juices, and evacuating the impure Humours by Urine.

We are, alſo, to take due Care, that the acrid ſubtile Sordes be continually eliminated by Perſpiration. This Effect is to be produced both before and after the Paroxyſm, not by actual Sudorifics, but by ſuch Medicines as, by increaſing the Tone of the Solids, accelerate the Circulation of the Blood, and by that means promote Sweat. This Intention is excellently anſwered by violent Exerciſe, ſuch as Riding, Leaping, or Walking a few Hours before the Paroxyſm, by which means I have often known Quartan Fevers removed. Accordingly *Celſus*, in *Lib.* 3. *Cap.* 15. lays it down as a Maxim, "That, on the Day the "Paroxyſm is expected, the Patient ought to get out of Bed, "uſe Exerciſe, and endeavour, if poſſible, to protract his "Exerciſe till the very Acceſs of the Paroxyſm; for, by this "means, the Fever is often removed." This Effect I have, alſo, from numberleſs Experiments, found to be happily produced by the following Mixture:

Take of the Water of Carduus Benedictus, four Ounces; of Treacle-water, half an Ounce; of the Salt of Carduus Benedictus, one Dram; of diaphoretic Antimony, half a Dram; of the Spirit of Vitriol, between twenty and thirty Drops; and of the Syrup of Carduus Benedictus, two Drams: Mix all together; and, if the *Primæ Viæ* are previouſly cleanſed, Half is to be exhibited three or four Hours before, and the other Half immediately after the Paroxyſm.

When the Fever is in the Decline, and, the Heat wearing off, the Body becomes ſpontaneouſly moiſt, we are to take great Care, that the Sweat be not interrupted by external Refrigeration, or drinking cold Liquors. If theſe Meaſures are not taken, the Fever is not only longer protracted, but, alſo, Contractions, and œdematous Swellings, of the Feet generally ſucceed. But 'tis expedient to promote the Sweat by moderate external Heat, and warm diluting Drinks.

Though Veneſection is not directly calculated for removing the Cauſes of Quartans, yet when there is a Suſpicion, that the

the Fever is ſupported by an obſtructed Circulation of the Blood through the abdominal Viſcera, as in thoſe ſubject to hyſteric and hypochondriac Diſorders, and thoſe afflicted with the Hæmorrhoids, or who have a Diſpoſition to that Diſcharge, a Vein may be opened in the Foot with ſo great Succeſs, that by one Veneſection I have often obſerved an obſtinate Quartan totally removed. As moſt pregnant Women are generally plethoric, if they are ſeized with a Quartan, they not only bear, but, alſo, require Veneſection, leſt by the intenſe Motion of the Blood, excited by the febrile Spaſms, the Uterus ſhould be ſtimulated to an Excluſion of the Fœtus before the due time. We are, therefore, carefully to conſider the various Stages of Quartans, the Habit and Strength of the Patient, together with the Diſpoſition of the Solids and Fluids, leſt, by unſeaſonable Veneſection, the Cure ſhould be render'd more difficult, and the febrile Spaſms, during the Paroxyſm, increaſed. It is obſervable, that the Blood taken from the Veins of Perſons labouring under Quartan Fevers is remarkably peccant, and has its Surface covered with a tough, yellow Phlegm; and, according to *Schenckius*, there is, alſo, a white pituitous Cruſt of this Kind found in the Veins of Perſons who are taken off by Quartans.

Nor in Quartans are Vomits to be uſed promiſcuouſly, and without Diſtinction; for when there is a Propenſity to vomit, ariſing from a Collection of crude and viſcid Juices in the *Primæ Viæ*, in conſequence of exceſſive Gluttony, it is highly proper, by an Emetic, to evacuate the peccant Matter by the neareſt Way, before it enters the Maſs of Blood, and affects the nervous Syſtem. But it is expedient not to exhibit a Vomit, unleſs the Viſcera are ſound, the Stomach and nervous Syſtem ſtrong, and the Lungs free from every Diſorder. Safe Vomits, and ſuch as are appropriated to this Purpoſe, are, alſo, to be uſed: Of theſe the beſt is the Root of Ipecacuanha, which, beſides its emetic, has, alſo, an aromatic and balſamic Quality. And, among Emetics calculated for this Purpoſe, we are to prefer thoſe prepar'd of Copper, as *Cyprian* and white Vitriol, to antimonial Preparations, becauſe the former, by conſtricting the bilious and glandular Ducts, not only prevents the farther Afflux of the febrile Matter, but, alſo, by contracting and ſtimulating the Fibres, renders them more capable of diſlodging the peccant Matter, deeply impacted in the nervous Parts. But antimonial Preparations, and thoſe of Copper, when duly mixed, and, as it were, reduced to a proper Temperament, afford an excellent Medicine, calculated both for cleanſing the Stomach, and ſubduing the Fever.

Though the *Peruvian* Bark, ſkilfully uſed, is of ſingular Efficacy againſt Quartan Fevers, yet we are not to call in its Aſſiſtance, unleſs the *Primæ Viæ* are duly cleanſed, the Plethora removed, and the Viſcera ſound, and free from Obſtructions. It is, alſo, ſafer in thoſe bilious Quartans which happen in the Summer, than in ſuch as rage in the Autumn, and are ſupported by ſome Diſorder of the Viſcera, and a tenacious State of the Juices. In this laſt Caſe, it is more expedient to uſe a Decoction of the Bark with Wine, with an Addition of bitter aperient and diaphoretic Subſtances, ſuch as the Tops of the Leſſer Centaury, the Herb Cardnus Benedictus, the Roots of red Gentian, and Burnet, together with Salt of Tartar.

In Quartan Fevers it is ſometimes expedient to heighten the Virtues of the Bark by an Addition of highly ſubtile Crocus of *Mars*, and a volatile urinous Salt. This Medicine, however, never proves hurtful, when exhibited at proper Seaſons, in juſt Quantities, and duly mixed with diaphoretic and reſolvent Subſtances. See QUINQUINA.

In order to diminiſh, or totally put a Stop to the Paroxyſms of Quartans, eſpecially ſuch as happen in the Autumn, are obſtinate, ſeize Perſons of languid Habits, or are accompanied with Drowſineſs, I have found excellent Effects produced by applying to the Wriſts Epithems prepared of acrid ſtimulating and gently veſicating Subſtances. The Vulgar uſe other Subſtances for this Purpoſe; but as their Smell is too ungrateful, ſo Epithems of this Kind are moſt commodiouſly prepared of Turpentine, Soot, Sal Ammoniac, bruiſed Spiders, Pepper, and *Venice* Treacle.

Mineral Waters, eſpecially thoſe of the cold and hot Kinds, in my Opinion, contribute not only to the Prevention, but, alſo, to the Cure of intermittent Fevers; but we are abſolutely to abſtain from them immediately before and during the Paroxyſm, taking care before the Acceſſion, to have the Water evacuated by proper Emunctories, leſt the febrile Motions ſhould, by that means be increaſed. For Drink, temperate Liquors, as we have already obſerved, are always to be uſed.

If in a Quartan Fever the Patient is exceſſively coſtive, it is expedient to render his Body ſoluble, rather by Clyſters than internal Medicines. The beſt Ingredients for Clyſters of this Kind are, ſuch Subſtances as, beſides their emollient Quality, are, alſo, paregoric, and allay the Spaſms; ſuch as the Tops of Yarrow, the Flowers of common Chamomile, Elder-flowers, the Flowers of the Lime tree, Cumin-ſeeds, Broth prepared of Veal, the Yolks of Eggs, and a little Sal Gemmæ, ſometimes, alſo, ſome antifebrile, bitter, nervous, and corroborating Subſtances, are commodiouſly mixed with ſuch Clyſters; for, in *France*, it has been cuſtomary, for ſome Years paſt, to cure Quartans by frequently injecting Decoctions of *Peruvian* Bark into the Anus. The ſame Effect is, alſo, produced by Clyſters of other antifebrile Decoctions, ſuch as thoſe of Carduus Benedictus, the Leſſer Centaury, Gentian-root, and the Herbs Marjoram, Roſemary, Southern-wood, and Sage. And certainly this Method is very uſeful in Infants, and ſuch as have Stomachs either naturally weak, or eaſily ſubject to Nauſeas; only we muſt obſerve, that the Body muſt be rendered ſoluble by an emollient and ſaline Clyſter, before that of the nervous and corroborating Kind is injected.

The violent Fevers with which Quartans, eſpecially in Perſons advanced in Years, are accompanied, are not without great Difficulty mitigated. The principal Relief is, however, to be expected from ſuch Medicines as render the Body ſoluble, as, alſo, from bathing the Feet; by which means, the Impetus of the Blood is derived from the Head to the inferior Parts. Among external things, the greateſt Relief is afforded by Vinegar of Roſes, or that of Rue mixed with Salt and Nitre, poured upon Bread, and applied to the Head.

In order to prevent a Relapſe into a Quartan, *Celſus*, in *Lib.* 3. *Cap.* 16. gives us his Advice in the following manner: "If, ſays he, a Fever of this Kind is removed, the Patient is "for a long time to remember the uſual Day of its Acceſſion, "and on it carefully to guard againſt Cold, Heat, Crudities, "and Laſſitude; for it eaſily returns, unleſs the Patient is very "careful of himſelf for ſome time after his Recovery." Hence, he ought, eſpecially on the Day in which the Paroxyſm uſed to return, to avoid Northerly Winds, a denſe, cold, and moiſt Air, ſuch as that of low-ſituated, marſhy, and ſubterraneous Parts, taking care at the ſame time to preſerve Perſpiration free and uninterrupted. He is to have a peculiar Care of his Regimen, and guard againſt eating too much, eſpecially of ſuch Aliments as are of difficult Digeſtion. He is, alſo, if poſſible, to preſerve a conſtant Tranquillity of Mind, and avoid Anger and Dread, by which I have frequently known a Quartan brought on.

Then the Stomach is to be corroborated, and the Digeſtion aſſiſted by ſtomachic Elixirs, prepared of bitter and aromatic Subſtances, which are to be long and frequently uſed, though in ſmall Quantities, leſt the Body, already weakened, ſhould be thrown into a preternatural Heat. But in a particular manner we are to take care, that the crude Juices afterwards generated be gently evacuated by Stool; for which Reaſon the Patient muſt frequently uſe the balſamic Pills, or the cinnabarine Pills, or the *Pilulæ de Ammoniaco* of *Quercetan*, with which, if the Fever has been ſuppreſſed by the Uſe of *Peruvian* Bark, we are to join the digeſtive Salt of *Sylvius*: By theſe meaſures, not only Relapſes, but, alſo, other more terrible Diſorders, and eſpecially ſlow Fevers, are ſeaſonably prevented. *Hoffman.*

QUARS. A Gall-ſtone. *Rulandus.*

QUARTARIUS. The fourth Part of a Sextary, containing nearly a quarter of a Pint.

QUARTATIO. A Separation of Gold from Silver, when mixed together, by means of acid Spirits.

QUARTURA. The ſame as QUARTATIO.

QUASSATIO. A Concuſſion.

QUATERNARIUS, or QUATERNIO. The Space of four Days.

QUATRIO. The ASTRAGALUS.

QUEBRICUM is, according to ſome, Arſenic; according to others, Sulphur.

QUELLEM. Original, or Elementary Earth. *Rulandus.*

QUELLES. An ELIXIR.

QUELMEISEL. The *German* Name for a Tent made of a Piece of Sponge, Gentian, or any other Root, ſo as to ſwell, when introduced into a Wound, or Ulcer, and dilate the Orifice.

QUERA-IBA *Braſilienſibus.* Marcgrav. & Piſo. The Name of a Tree which grows in *Braſil.* The Bark contuſed and boiled, is effectual for curing Wounds or Ulcers in the Legs, or other Parts.

QUERCERA. See EPIALOS.

QUERCUS.

The Characters are;

The Leaves are ſinuous, and, as it were, laciniated: The Flower is male, amentaceous, and conſiſts of denſe Cluſters of male Apices, affixed to a thin long Capillament: The Fruit grows at a remote Diſtance from the Flower, on the ſame Tree, is furniſhed with three Tubes, and grows in a Calyx, conſiſting of ſmall angular Leaves, and becoming at laſt ſquamous: This Fruit becomes an Acorn, whoſe lower Part is contained in the Calyx, and, under an entire coriaceous Shell, incloſes a Kernel which cleaves in two.

Boerhaave

Boerhaave mentions five Species of Quercus; which are,

1. Quercus; latifolia; mas; quæ brevi pediculo eſt. *C. B. P.* 419. *Platyphyllos, mas. Lugd.*

The ſweet and honeyiſh Moiſture with which its Leaves are often covered, and which the Bees gather with a great deal of Care, does not come from the Air, as People imagine; it is an extravaſated Juice, which is poured out upon theſe Parts, not only of the Oak, but, alſo, of the Maple, where it makes a kind of Sugar; of the Aſh, and of the Larch-tree, where it produces the Manna: In ſome Seaſons the Leaves of the Lime-trees, in the great Alley of the King's Garden, are covered with it, in ſuch a manner, that they look as if they were verniſhed: The Waſhings of theſe Leaves are ſweetiſh, and looſen the Belly. *Martyn's Tournefort.*

2. Quercus; latifolia; fœmina. *C. B. P.* 419. *Platyphyllos, fœmina.* Lugd. 2.

3. Quercus; cum longo pediculo. *C. B. P.* 420. *Tourn. Inſt.* 583. *Boerh. Ind. alt.* 2. 177. *Quercus.* Offic. *Quercus vulgaris.* Ger. 1156. Emac. 1339. *Quercus latifolia.* Park. Theat. 1386. Raii Synop. 3. 440. *Quercus vulgaris longis Pediculis.* J. B. 1. 70. Raii Hiſt. 2. 1335. THE OAK.

This is a Tree which grows plentifully in *England*, being one of the largeſt and moſt common Trees we have, having ſmooth, ſhining, green Leaves, ſinuated on both Sides. We have two Sorts, one of which, and the moſt common, bears its Leaves on ſhort Foot-ſtalks, and its Fruit or Acorns on long; and, on the contrary, the other has the Fruit on ſhort Foot-ſtalks, and the Leaves on long.

Of the Oak, the Bark, the Buds, the Acorns, and their Cups, are uſed; as, alſo, the Galls, which are Excreſcencies cauſed by Inſects, on the Oaks of the Eaſtern Countries, of which there are divers Sorts, ſome perfectly round and ſmooth; ſome rougher, with ſeveral Protuberances; but all, generally, having a round Hole in them.

All the Parts of the Oak are ſtyptic, binding, and uſeful in all kinds of Fluxes and Bleedings, either inward or outward: The Bark is frequently uſed in Gargariſms, for the Relaxation of the Uvula; and for ſore Mouths and Throats: It is, alſo, uſed in reſtringent Clyſters, and Injections againſt the Prolapſus Uteri, or Ani. The Acorns, beaten to Powder, are frequently taken, by the Vulgar, for Pains in the Side.

The only officinal Preparation is the *Aqua Germinum Quercus. Miller's Bot. Off.*

4. Quercus; pedem vix ſuperans. *C. B. P.* 420. *Robur.* VII. *ſive Quercus; pumila.* Cluſ. H. 19. Deſcript. VI.

5. Quercus; parva; ſive Phagus Græcorum, & Eſculus Plinii. *C. B. P.* 420. *Raii Hiſt.* 2. 1386. *Tourn. Inſt.* 583. *Boerh. Ind. alt.* 2. 177. *Phagus Eſculus.* Offic. *Phagus ſive Eſculus.* Park. Theat. 1386. *Phagus vel Eſculus.* J. B. 1. 2. 74. ESCULENT, or SWEET OAK.

It grows in *Greece* and *Dalmatia*, and the Bark, Leaves, Acorns, and their Cups or Calyces, are in Uſe, and agree in Virtues with thoſe of the common Oak.

Beſides the foregoing Species of Quercus, *Dale* mentions the two following; the firſt is the *Cerrus*, or *Holm Oak.* See ÆGILOPS.

The ſecond is the,

ROBUR. Offic. *Robur tertia Cluſii.* J. B. 1. 2. 76. Raii Hiſt. 2. 1386. *Robur cum Galla majore rugoſa.* Park. Theat. 1386. *Quercus Gallam exiguæ nucis magnitudine ferens.* C. B. P. 420. Tourn. Inſt. 583. THE GALL-OAK.

It grows in *Pannonia* and *Iſtria.* The Galls are uſed in Medicine.

With reſpect to Galls, there are ſeveral Sorts: The firſt and beſt is termed the *Aleppo* Nut, or *Galla Spinoſa*; the ſecond is white; the third, ſmooth and round; the fourth, of an irregular Figure; and the fifth, has a kind of Crown. All theſe Galls are owing to Inſects, which firſt prick the Oak-trees, and then lay their Eggs in the Wound: Theſe Eggs ſwell with the Excreſcence, and firſt turn to Worms; then to Flies, which, having perforated the Galls, make their Eſcape. And as ſome Eggs are unfruitful, and remain in the Gall, they are obſerved to yield a volatile Salt.

Galls are very aſtringent, and are by ſome given inwardly in Dyſenteries: They have likewiſe been recommended in intermitting Fevers; but the Foundation of their febrifugous Quality depends on too few Inſtances to be relied on. *Geoffroy.*

QUERCUS MARINA. See FUCUS.

QUERQUEDULA. The Teal: A Species of wild Duck. It is eſteemed good for the Wind Colic, when applied to the Belly. *Lemery des Drogues.*

QUERQUERA. The ſame as QUERCERA.

QUIES. Reſt. The Effects of which are abundantly explained, under the Article FIBRA.

QUINGOMBO. The *Portugueſe* Name for a Species of *Alcea*, which grows in *Braſil. Raii Hiſt. Plant.*

QUINQUEFOLIUM.

The Characters are;

The Root is fibrous and perennial: The Leaves grow by more than Threes, at the Top of the Pedicle, round one Centre: The Calyx is monophyllous, not caducous, and, as it were, octophyllous, or decaphyllous, expanded like a Star, and furniſhed with very numerous Stamina; proceeding from the Compaſs of the Baſe of the Ovary: The Flower is roſaceous, pentapetalous, and more rarely tetrapetalous, the Petals ſtanding round the Baſe of the Ovary: The Ovary is a ſeminal Head, involved in a Calyx, hemiſpherical, and has ſeveral Eggs; furniſhed with a long erected Tube.

Boerhaave mentions eleven Sorts of Quinquefolium; which are,

1. Quinquefolium; rectum; luteum. *C. B. P.* 325. *Pentaphyllum, ſive potius Heptaphyllum, majus, luteum, montanum, flore majore.* M. H. 188.

2. Quinquefolium; majus; repens. *C. B. P.* 325. *Tourn. Inſt.* 297. *Boerh. Ind. alt.* 40. *Pentaphyllum & Quinquefolium.* Offic. *Pentaphyllum vulgatiſſimum.* Park. Theat. 398. Raii Hiſt. 1. 611. Synop. 3. 255. *Pentaphyllum ſive Quinquefolium vulgare repens.* J. B. 1. 397. *Quinquefolium vulgare.* Ger. 836. *(figura tranſpoſita)* Emac. 987. CINQUEFOIL, or FIVE-FINGERS.

The common Cinquefoil, or five-leaved Graſs, has a large ſpreading, thick, woody Root, covered with a dark-brown Bark, and full of ſmall Fibres, ſending forth many ſlender creeping Stalks, which lie on the Ground, emitting ſmall fibrous Roots from the Joints, by which it eaſily propagates itſelf; at every Joint grow the Leaves, five ſet together upon one long Foot-ſtalk, which are narrow, veiny, ſerrated about the Edges, the two outermoſt being the ſhorteſt: Amongſt theſe come forth the Flowers, conſiſting of five round yellow Leaves, with ſeveral Stamina in the Middle, ſet, alſo, on long Foot-ſtalks; and after them ſmall, brown, naked Seed: It grows every-where by Hedges and Way-ſides, flowering all Summer. The Leaves and Root are uſed.

They are reſtringent and drying, and ſerviceable againſt all kinds of Fluxes and Hæmorrhages: The Powder of the Root, given to the Quantity of a Dram, two or three times a Day, is ſaid to cure Agues. The ſame is, alſo, accounted good againſt malignant Diſtempers, and is an Ingredient in *Venice* Treacle: It is frequently uſed in Gargles for ſore Mouths and ulcerated Gums, and to faſten looſe Teeth. *Miller's Bot. Off.*

3. Quinquefolium; quod Pentaphyllum, ſeu potius Heptaphyllum; erectum caule rubro; hirſutus. *H. C.*

4. Quinquefolium; rectum; floribus ſubluteis. *C. B. P.*

5. Quinquefolium; minus; flore pallidè luteo. *T.* 297.

6. Quinquefolium; folio argenteo. *C. B. P.* 325. *Pentaphyllum rectum, foliis profunde ſectis, ſubtus argenteis, flore luteo.* J. B. 2. 398.

7. Quinquefolium; minus; repens; luteum. *C. B. P.* 325. *Pentaphyllum; parvum, hirſutum.* J. B. 2. 598.

8. Quinquefolium; minus; repens; luteum; flore tetrapetalo. *Boerh. Ind. alt.* 40. *Tormentilla.* Offic. Ger. 840. Emac. 992. Raii Hiſt. 1. 617. Synop. 3. 257. J. B. 2. 598. *Tormentilla vulgaris.* Park. Theat. 394. *Tormentilla ſylveſtris.* C. B. P. 326. Tourn. Inſt. 298. TORMENTIL.

The Root of Tormentil is pretty thick and large, for the Bigneſs of the Plant, frequently crooked and knotty, of a reddiſh Colour in the Inſide, with many ſmall Fibres; the Stalks are long, and very ſlender, and hardly able to ſupport themſelves: It has frequently ſeven, though ſometimes only five, long narrow Leaves growing at a Joint; leſs than Cinquefoil, and ſerrated only at the Ends: The Flowers are ſmall and yellow, of four Leaves, with a few Stamina in the Middle: The Seed is ſmall, growing naked on the Calyx. It grows in Woods, and in Commons, and flowers in *June* and *July.* The Roots are uſed.

They are very drying and binding, good for Diarrhœas and Dyſenteries, eſpecially attended with malignant Fevers; they being, alſo, accounted alexipharmic: They are ſerviceable in Hæmorrhages of the Noſe, Mouth, or Womb: They faſten looſe Teeth, and help the Relaxation of the Uvula. *Miller's Bot. Off.*

9. Quinquefolium; album; majus; alterum. *C. B. P.* 325. *Pentaphyllum album.* J. B. 2. 598.

10. Quinquefolium; foliis ternis; præcedenti ſimile. *H. C.*

11. Quinquefolium; quæ Tormentilla; reptans; alata; foliis profundius ſerratis. *D. Plot. Raii Syn.* 142. *Boerh. Ind. alt. Plant. Vol.* 1.

QUINQUE FRAGMENTA PRETIOSA. The Fragments of the precious Stones.

Theſe rare Compoſitions are hardly prepared any other Way than by Chymiſtry, which ſometimes affords us an Opportunity of employing them in Medicine: But it is ſufficient, that we have ſpoken of each of theſe Stones in its proper Place; to which we refer the Reader. *Lemery des Drogues.*

QUINQUE-NERVIA. See PLANTAGO.

QUINQUINA.

Cortex Peruvianus, *Peruanus*, *China Chinæ*, *Quinquina*. Offic. *China Chinæ*, *Cortex Peruvianus*, *Quinquina*, *Cortex Cardinalis de Lugo*, *Caſcarilla*. Mont. Exot. 8. *Kina Kina*, *vel Cortex Peruvianus Officinarum*. Ind. Med. 63. *Arbor febrifuga Peruviana*, *China Chinæ*, & *Quinquina*, & *Gannana peride dicta*. Raii Hiſt. 2. 1796. *Pulvis febrifugus Peruvianus*. Barthol. Hiſt. Med. Cent. 5. p. 107. *An Holquahuilt*, *ſeu Arbor Chilli*. Hern. 50. Cap. 10. THE JESUITS TREE.

It is an Opinion univerſally received, that every Diſeaſe has a Remedy peculiar to itſelf; and a ſick Perſon can hardly complain to any Man, who will not recommend an infallible Medicine for his Diſorder. This Error, which is the genuine Foundation of Quackery, ſhould, if poſſible, be entirely eradicated out of the Minds of Men; for as the Powers and Effects of Bodies are not in their Natures abſolute, ſo the Qualities of Food and Phyſic have a Relation to the human Body, on which they operate: Hence Experience teaches us, that the ſame Medicines may be both prejudicial and ſerviceable to different Perſons labouring under the ſame Diſorder, though adminiſtred in the ſame manner.

Hippocrates long ago inculcated this Doctrine in *Lib. de Art.* 56. "Every one, ſays he, is not a Judge, what is beneficial "and what pernicious; and yet the whole Art of Medicine "conſiſts in this Diſtinction, for thoſe Remedies, which are of "Service, are ſo from the proper Uſe of them; and thoſe "which are of Diſſervice from the Abuſe of them." This Author by no means aſcribes to all Medicines, an abſolute Power of procuring Health, but only in a certain reſpect; and that not becauſe they are exhibited in any particular Diſorder, but becauſe they are duly and judiciouſly preſcribed, after a thorough Examination into the Patient's Conſtitution, with the Cauſe and Nature of the Diſtemper, having, at the ſame time, a peculiar regard to the Time, Order, Doſe, and Quantity; but when theſe Cautions are neglected, he declares them noxious. Since, therefore, Medicines are both ſerviceable and prejudicial, he juſtly terms Medicine an Art; and pronounces him only a good Phyſician, who makes this Diſtinction between the different Effects, and various Operations, of Remedies.

A due Regard to this Doctrine of *Hippocrates* would put an End to many opprobrious Controverſies between Men of Learning; whilſt ſome are ſurpriſingly laviſh in their Encomiums, and others equally profuſe in their Diſparagement, of the ſame Remedy, in the ſame Diſeaſe; whilſt they very ſeldom agree in determining the Power, Effect, and Uſe, of any Medicine, in this or that Diſeaſe. No one can be a Stranger to the different Sentiments, which are entertained of thoſe Medicines, called *heroic*; ſuch as Mercurial Preparations, Antimonial Vomits, Chalybeates, Opiates, draſtic purgative Narcotics, and, among chirurgical Remedies, Veſicatories, Fontanels, Setons, and Veneſection: But what is ſtill more ſurpriſing, they agree no better in their Opinions of the moſt ſimple and diætetic Parts of Medicine, ſuch as cold and hot Baths, and the various Cures performed by Milk and Abſtinence.

The *Peruvian* Bark, brought into *Europe* about ſeventy Years ago from *America*, has met with the ſame Fate: It is wonderful, with what Applauſe it was at firſt received; and what Commendations were at firſt beſtowed upon it, as an infallible Remedy againſt Intermittents: Nor are there wanting, at this Day, ſome who have it in the higheſt Eſteem. Another Set of Phyſicians condemn it as unſafe, and even pernicious; and theſe have ſtill their Followers; and both Parties, in their Writings, appealed to their own Practice: But, for my own Part, I eſteem it a good, effectual, and ſafe Remedy, when properly uſed, according to the above-mentioned Rule of *Hippocrates*; but hurtful and dangerous, when imprudently or unſkilfully given, without any regard to the Conſtitution of the Patient, the febrile Cauſe, the Stage of the Diſeaſe, and other Circumſtances. I have, therefore, made choice of it for the Subject of my preſent Diſſertation, in which I ſhall firſt produce the Arguments of the Advocates for the Bark, and then thoſe of their Opponents; next from a rational Account of Fevers, and their Cauſes, and an Inquiry into the Principles of the Bark, and its manner of operating, I ſhall ſhew both its ſalutary and prejudicial Qualities; and, laſtly, anſwer all Objections.

The *Peruvian* Bark, then, has a great Number of Advocates; for, at its firſt Appearance in *Europe*, it was known at *Rome*, and ſold, by the Jeſuits, at an extravagant Price, as a moſt infallible Febrifuge; and in a little Bill, with Directions for the Uſe of it, they declared, that this alone, with a preceding Purge, if neceſſary, would cure even Quartans. *Bartholine*, *Cent.* 5. *Hiſt.* 50. tells us, that Cardinal *de Lugo* had Teſtimonials of above a thouſand Cures performed by this Medicine in the Year 1653, in which ſimple and double Quartans greatly raged; and that *Fonſeca* had, by Experience, found it not only innocent, but ſalutary. *Fr. Redi*, *de Experim. Nat. a.* 143. ſays, its Effects are miraculous. And *Tozzi*, *in Comment. in Aph.* 25. *Sect.* 2. aſſerts, that Quartans, which had hitherto been eſteemed incurable, are now eaſily and ſafely cured by the *Peruvian* Bark.

From *Italy* it was conveyed into *France*, and there ſeveral times adminiſtered with ſuch Succeſs, that *Tagaultius* gave it, both to the King, and Dauphin, more than once, to good Purpoſe. About the ſame time it was received in *England*, with almoſt univerſal Applauſe. For *Willis*, *de Febr. Cap.* 6. expreſsly ſays, that of an hundred Patients, who had taken it, ſcarce one miſcarried. To this one may add, the Teſtimony of Mr. *Boyle*, in *Tr. de Philoſ. Experim.* who aſſures us, that he had removed Quartans of a Year's Continuance, by a Doſe or two of the Bark, to the Quantity of a Dram. But *Digby*, in *Tr. de Medic. Secret.* moſt ſolemnly affirms, that, out of thirty whom he had cured of Quartans, by the Bark, not two relapſed: Adding farther, that a Relapſe was rather a Reproach to the Phyſician, than the Remedy. That great Practitioner *Sydenham*, in *Tract. de Febrib.* has not been wanting in his Encomiums on the Bark, and is very particular in his Deſcription of the proper Method of uſing it. And that it is ſtill in great Repute in *England*, is certain, from the Writings of *Freind*, *Liſter*, and *Moreton*, which laſt in *Tr. de Febribus*, ſays, "The "*Peruvian* Bark is, by the unanimous Conſent of all mo"dern Phyſicians, an univerſal Febrifuge, which entirely, "ſpeedily, ſafely, and ſucceſsfully cures all intermitting Fe"vers, at any Seaſon of the Year, at every Age; and in every "Temperament; ſo that it is unneceſſary for Phyſicians to "rack their Inventions for the Diſcovery of any other."

By this Time it had gained great Reputation in moſt Parts of *Europe*. Among the *Swiſs*, *Muraltus* greatly extolled it, and in *M. N. C. Dec.* 2. *An.* IIX. *Obſ.* 2. has given Inſtances of its Efficacy, both in Tertians and Quartans, upon Young and Old, and concludes with theſe remarkable Words, "It would "require a large Volume, to recount the Cures performed by "myſelf, and others, with the Powder of this Bark." The Writings of *Boerhaave* and *Decker* convince us, that it was, and ſtill is, greatly eſteemed in *Holland*. *Bohnius*, *in Diſſ. de minus ſuſpecta Febrium Fuga*, and *Bergerus*, *Diſſ. de Cortice Chinæ ab iniquis Judiciis vindicato*, have, by many ſolid Arguments, proved the Virtues of it; and that the *Germans* adminiſtered it in intermitting Fevers. Nor was it leſs eſteemed by *Waldſchmidius*, *Dolæus*, and *Zapfius*, who acquired both Fame and Wealth, by an antifebrile Electuary, whoſe Baſis was the Bark: And his Son-in-law *Stroidel* ſtill preſcribes it with the ſame Succeſs.

On the other hand, there have been, and ſtill are, many learned and excellent Phyſicians, who do not ſcruple to reproach the Bark with the Title of an *uncertain*, *dangerous*, and even *pernicious Medicine*. Some, relying upon their own Experience, poſitively affirm, that it is not only attended with violent Relapſes, but new and incurable Diſeaſes, as a Cachexy, œdematous Tumors of the Feet, Dropſies, obſtinate Coſtiveneſs, Oppreſſion of the Præcordia, hypochondriacal and hyſterical Affections, ſlow and hectic Fevers, accompanied with a Loſs of Strength and Appetite, Conſumptions, and ſometimes Convulſions and Epilepſies in Children. Among its moſt conſiderable Antagoniſts is *Baglivi*, who, *Opp. Lib.* 2. ſays, that a Tertian will not admit of a Febrifuge, till the fifteenth Day, when it ceaſes ſpontaneouſly; that all Remedies before that Time are uſeleſs, if not prejudicial; and that thoſe Phyſicians acted prepoſterouſly, who, by Febrifuges, endeavour, as it were, to check a Fever in its Infancy; for within a few Days it either returns more violently, or is ſucceeded by Aſthmas, Dropſies, ſlow Fevers, Conſumptions, or ſome other dangerous Diſtempers.

Among the *Germans*, *Ettmuller*, *Opp. Tom.* 2. calls it a precarious Remedy, and elſewhere affirms, that it generally produces Coſtiveneſs, a Tumor and Hardneſs of the Abdomen, with tenſive Pains; and that when theſe gradually remit, or are irritated by Purgatives, or the Spirit of Sal Ammoniac, the like Fever returns with a more intenſe Cold. *Pallifius*, alſo, in an Epiſtle to *Baglivi*, informs us, that the *French* give the Bark ſucceſsfully in Fevers; but that this Practice would be very ridiculous in *Italy*; nor does he adviſe it till towards the End, for ſtrengthening the Stomach. For more Inſtances of the noxious Quality of the Bark, ſee *Blegny*, *Zodiac. Gall. Med. Phyſ. An.* 4. *Menſ. Auguſt. Anno* 5. *Menſ. Januar.* and *M. N. C. Dec.* 3. *An.* 9. *Obſ.* 109. and *Cent.* 3. And *Stahlius* in *Theoria Med.* and *Opuſc. Phyſico-Med.* as, alſo, *Juncker*, in *Conſpect. Medic. Theoret. Pract.* every-where oppoſe and condemn the Uſe of the Bark in Fevers. And I muſt confeſs, that an improper Uſe of the Bark is very pernicious, and too often attended with dangerous Relapſes, or other ſevere Diſtempers; and particularly, that a Quartan is followed by

by the Dropſy; and a Tertian, by hypochondriac Affections, in conſequence of the prepoſterous Uſe of the Bark.

I cannot, however, agree with thoſe who pronounce the Bark abſolutely, and always, prejudicial in Fevers; and, for that Reaſon, endeavour to diſcredit it, as ill adapted to their Cure; unfriendly to their happy Terminations; and oppoſite to the ſalutary Efforts of Nature: For theſe imagine, that a Fever is nothing but an exactly methodical Effort of Nature, which, by increaſing the Motion of the Solids and Fluids, endeavours to diſcharge out of the Body, through the proper ſecretory and excretory Ducts, thoſe Cauſes, which give Birth to the Diſorder: For the Accompliſhment of this, ſay they, the Humours muſt be put in Motion, and the Paſſages opened; but Aſtringents, among which is the Jeſuit's Bark, incraſſate the Fluids, contract and obſtruct the ſmall Canals of the excretory Ducts, and, conſequently, retain the morbific Matter; which muſt neceſſarily produce Relapſes, or other dangerous Diſtempers.

They further ſuppoſe, that Nature's principal Deſign in Intermittents, is, to diminiſh a Superfluity of Blood, pernicious to Life, by an Increaſe of internal Heat, reſulting from an Acceleration of the Blood's Circulation, and certain Reſolution of it into an excrementitious Serum; and at the ſame time, by a ſtronger Impulſe, to free the Viſcera from Diſorders, and Obſtructions: And, conſequently, that theſe febrile Motions are, as is were, Remedies and Means, by which Diſeaſes are cured, Pains expelled, and thoſe things which threaten Death, eradicated; ſo that a Suppreſſion of them muſt be very dangerous. Beſides, that it is an hazardous Attempt to diſturb and hinder this wiſe Intention of Nature, in expelling the noxious Humours through the ſecretory and excretory Ducts, by inducing a contrary Effect from Aſtringents; which Practice muſt be attended with Relapſes, ſevere hypochondriacal and hyſterical Affections, ſlow Fevers, Obſtructions of the Viſcera, Jaundice, Cachexy, Dropſy, Melancholy, and obſtinate Coſtiveneſs.

But they rely principally upon this, that the Fomes of a Tertian is ſeated in the Primæ Viæ, or in the Stomach; and eſpecially in the firſt ſmall Inteſtines and adjacent Organs; ſuch as the meſeraic Veſſels and Glands: But as this Fomes is generally a viſcid and tenacious Humour, that it is an Inſtance of the Wiſdom of Nature, that in the Beginning of the Diſeaſe, the porous and external Parts ſhould be conſtricted, that, by this means, the Blood may be forced to the internal Parts, and detained there, till a ſufficient Quantity of the ſerous lymphatic Humour tranſpires through the Coats and Glands of the Viſcera into their Cavities, which ſerves afterwards partly to colliquate and mollify, and partly to diſcharge the febrile Matter: Hence they conclude, that all Medicines are pernicious which obſtruct theſe ſalutary Motions, inſpiſſate the viſcid febrile Humour in the Primæ Viæ, and by conſtricting the excretory Ducts ſuppreſs all beneficial Secretions and Excretions, as well by Stool as Urine, and the Pores of the Skin. But the Bark is of this aſtringent Quality, and therefore to be rejected; and ſuch Remedies are only to be uſed, as aſſiſt Nature, diſſolve the febrile Matter; and, by decreaſing the Redundancy of the Blood, and promoting Secretions of all kinds, free the Body from the peccant Humour; and not ſuch as dangerouſly repreſs it, by a Suppreſſion of the febrile Motions.

Thus the Adverſaries of the Bark argue; and, at firſt Sight, they ſeem to have ſome Shew of Reaſon on their Side: But whether this ſhould poſitively deter all Phyſicians from the Uſe of it, is next to be inquired into. Their whole Argument, then, is founded on the Suppoſition of ſome internal Agent, which, upon a previous Knowledge, and ſubſequent rational Intention, produces and directs the vital Motions, among which are the febrile, as well as the Effects of Remedies, to ſome certain End. But ſuch a Principle is ſo far from being uſeful, either in the Theory or Practice of Phyſic, that it eſtabliſhes Errors, or induces Confuſion, both in explaining phyſical Subjects, and diſcovering or applying Remedies.

He who underſtands this, will ſoon determine what Judgment to paſs upon the febrile Motions excited by this Principle: They eſteem theſe Motions naturally ſalutary; whereas they are rather deſtructive; and accuſe wiſe Nature of Imprudence and Madneſs. For every Smatterer in Phyſic knows, that this univerſal Commotion is attended with ſpaſmodic and convulſive Agitations of the external and nervous Parts, and, conſequently, of the whole nervous Syſtem; not without a violent Injury to the animal Functions, and Danger of Death: So that every one, who dies of an intermitting Fever, expires with theſe Symptoms. And indeed, if this Agent could at Pleaſure direct the vital Motions, it would be more ſafe, eaſy, and rational, without this univerſal pernicious Spaſm, and Stricture of the Body, to conduct this copious Motion of the Blood and Humours, gradually to the Seat of the Diſtemper. And though I own, that Fevers, eſpecially of the intermitting Kind, in

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Bodies full of thick and impure Juices, ſometimes; by an extraordinary progreſſive Motion of the Humours, and an Increaſe of Heat, prove medicinal, and prevent eminent; chronical, and violent Diſorders, ariſing from Obſtructions of the Viſcera, yet they are not always accompanied with a Redundance of Blood and Humours; Impurity; or an exceſſive Craſſitude of the Blood and Juices, or an Infarction of the Viſcera; much leſs are theſe the immediate Cauſes of Intermittents; and, conſequently, this ſo impetuous Motion of the Solids and Fluids, with a Diſſolution of the vital Humours, is quite unneceſſary.

As to that Part of their Arguments, which is built upon Nature's Deſign for the Preſervation of the Body, to diminiſh the Redundance of the Blood, by a diſſolutory Reſolution of it, by the inteſtine Motion; we abſolutely deny a Redundance of Blood and Humours to be the Cauſe of the Diſtemper: For, if this was the Caſe, plethoric Perſons would be moſt ſubject to Fevers; and all kinds of Fevers removed by ſeaſonable Veneſection. Whereas a Conſumption of Blood, and its excrementitious Particles, is the Effect and neceſſary Conſequence of the febrile Heat, which is rather an Enemy, than a Friend, to Nature, as it diſſipates and deſtroys the Strength, upon which the Vigour of the vital Motions depends.

Of no greater Validity is that Way of reaſoning, which attributes the Cauſe of Intermittents to the crude, viſcid, tenacious Humours, proceeding principally from Indigeſtion in the Primæ Viæ, and adjacent Organs; for intermitting Fevers very ſeldom proceed from an irregular Diet, or bad Digeſtion: But we may rather deduce the Origin of Tertians from a Quantity of acrimonious bilious Humours in theſe Parts, eſpecially ſince we find young, choleric, and paſſionate Perſons, liable to them in very hot Seaſons; and that their Vomits and Stools are bilious, and their Urine generally high-coloured, from a copious Mixture of ſulphureous and bilious Particles. And though I do not approve of Aſtringents in all kinds of Fevers, yet I cannot allow, that the Bark, judiciouſly exhibited, has this Effect; but will rather venture to aſſert, that it promotes Excretions and Perſpiration, as I ſhall ſhew more at large hereafter.

I ſhall now propoſe my own Theory of Intermittents, and their Generation; by which we ſhall be the better enabled to judge of the proper Methods of Cure; and the Remedies beſt adapted to remove them. But I muſt premiſe, that Experience convinces us, that neither an irregular Diet, nor bad Digeſtion, gives Riſe to them in one or two Perſons, but that they rage epidemically, and ſpring from a preceding; unuſual, long-continued, hot, and dry State of the Air, when we careleſsly expoſe ourſelves, about Sun-ſet, to the North Wind, or cool; moiſt Breezes, from whence we feel a remarkable Cold and Shivering. For this Reaſon in low marſhy Countries, which abound with Ponds, and ſtagnating Waters, we ſee the Inhabitants ſo frequently afflicted with Intermittents at all Seaſons; that they ſeldom live to any great Age; for an Air which is cold, denſe, moiſt, and replete with Inſects, muſt ſtop Perſpiration. Nor does any, eſpecially an intermitting, catarrhous; arthritic, or rheumatic Fever, attack us, till cuticular Excretion has been leſſened or ſuppreſſed; nor are we, before that; in Danger of a Relapſe; and the Continuance and Violence of the Diſorder is proportioned to the Interception and Suppreſſion of this ſalutary Evacuation.

When there is, therefore, a large Collection of noxious Humours, either from the Temperature and preternatural State of the Air, an Irregularity in the Affections of the Mind, or coarſe Diet, which ought to be conveyed through the Pores; and the Tranſpiration, which ſhould rather be increaſed, for carrying off ſuch a Quantity of active, vapouriſh, ſalino-ſulphureous Particles, is, by a Stricture of the nervous and excretory Glands of the Skin, greatly impeded, it neceſſarily follows, that the Motion of the excrementitious Serum muſt be directed another Way, that is, to the internal Parts. As this; in catarrhous Fevers, happens to the glandulous Parts of the Noſe, Fauces, and Bronchia; in thoſe of the rheumatic and arthritic Kind, to the Membranes of the Muſcles, and nerveo-glandulous Ligaments of the Limbs; in Diarrhœas to the Coats of the Inteſtines; ſo, in Intermittents, the ſecretory and depuratory Viſcera of the Abdomen, as the Liver, Pancreas, Glands, and glandular Coats of the Stomach and Inteſtines, are affected. But this malignant Humour here collected, vitiates, corrupts, and contaminates the fermentative, lymphatic, ſalival, and bilious Juices, deſtined to Digeſtion and Chyliſication; for theſe, whilſt lodged in the Cavity of the Duodenum, by their mutual Fermentation, and Commixture with the Crudities of a bad Digeſtion, contract, by their Continuance, a worſe Diſpoſition, and become very prejudicial to the nervous Parts. Theſe depraved Juices being ſucceſſively conveyed to the Blood, as well through the Pores as Tubes, when they reach the nervous Membranes, encompaſſing the Brain

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and ſpinal Marrow, excite, by their noxious Quality, an univerſal Spaſm in the Veſſels and nervous Syſtem, which conſtitutes the Eſſence of a Fever.

For a Fever is nothing more, than a Diſorder or Effect of a preternatural Affection of the nervous Syſtem: For all the ſubſequent Symptoms, as Pains in the Head and Back, particularly about the firſt Vertebra of the Loins, convulſive Pains of the Joints, Laſſitude, Languor, Cold, Rigor, and Horror, ſometimes productive of a Concuſſion of the whole Body, Anxiety of the Præcordia, and Difficulty of Breathing, with Inquietude, a contracted, quick, ſmall, unequal Pulſe, Vomiting, or an Inclination to it, frequent Thirſt in the cold Fit, a very great Coſtiveneſs, or even a Flux, in ſome a Stimulus to make Water, and, as I have often obſerved in old Men, afflicted eſpecially with a Quartan, a Deprivation of the Underſtanding and Senſes, all plainly indicate a violent Diſorder of the nervous Syſtem. Whilſt, therefore, under theſe Symptoms, by the Stricture of the exterior Parts, the Blood is impelled to the larger Veſſels, the Lungs, Head, and Heart, it by its Quantity excites a more violent Pulſe, and quicker Syſtole, in the Muſcle of the Heart: Hence the Blood circulates with more Celerity and Strength; the Motion of the Arteries becomes more violent and ſwift; the Spaſms of the Nerves are relaxed by this Increaſe of Heat, and the Matter which produced them diſcharged: The Blood is then invited to the Surface of the Body; and the Pores of the Skin, upon this Remiſſion of the Stricture, being opened, a Sweat ſucceeds.

This ſeems to me the Origin and Progreſs of an intermittent Fever; and I ſhall now endeavour to account for the Return of a Paroxyſm, at a particular Diſtance of Time: This febrile Matter in the Duodenum, compoſed of vitiated, bilious, lymphatic, and ſalival Juices, with the Crudities of indigeſted Food, paſſes ſucceſſively to the Blood and nervous Syſtem. Then what remains after this Fermentation, if I may ſo call it, receives freſh Nouriſhment from the impure Juices flowing out of the Liver, Pancreas, and Glands of the Duodenum: Then, by the extraordinary Increaſe of Motion in the Paroxyſm, the Blood and Serum degenerate into mucid, ſaline, ſulphureous Sordes, which, as they are not entirely diſſipated on the intermediate Day, remain within, and increaſe the Corruption of the lymphatic ſalival Juices, and of the Bile itſelf. And give me Leave to make one Obſervation, which no one, I think, has yet made; which is, that upon the intercalary Day, the Weakneſs of the Pulſe, and the Coldneſs, rather than Heat of the external Parts, and Skin, ſufficiently prove the Tranſpiration to be incapable of diſcharging the febrile Matter. And, laſtly, it is very probable, that the Tone, Vigour, and Function of this univerſal, nervous, fibrous, and tubular Emunctory of the Body, the Skin, are very much weakened by ſo many violent and oppoſite ſpaſmodic Motions, followed by an exceſſive Remiſſion; ſo that the ſalutary Buſineſs of inſenſible Tranſpiration, cannot be effectually performed through the whole Courſe of the Fever, and, of conſequence, the Depuration of the Blood and Humours not carried on with proper Vigour: From theſe Conſiderations we may reaſonably conclude, that the Fomes, which is continually receiving freſh Supplies, may, in a certain Space of Time, be collected into a Quantity ſufficient to bring on another Fit.

That the Paroxyſms return ſometimes daily; ſometimes on the ſecond, third, or fourth Day, and that at different Hours; and ſometimes are double, may be attributed to the Difference of the Matter, either on account of its Quantity, and Activity or Inactivity, and the greater or leſs Afflux of it to the Primæ Viæ; and likewiſe the different State of the Viſcera, eſpecially the Liver, Spleen, and Pancreas. It is very manifeſt, that anomalous Quotidians, Tertians, and Quartans, were epidemical in *Germany* laſt Year, in conſequence of the unuſual Length of the Heat and Drought in the Summer and Autumn; and that theſe Fevers muſt proceed from the various Diſpoſition of the Humours and Viſcera, according to the Variety of the Temperaments and Foods of the Patients.

After this explicit Account of the Cauſe and Nature of intermitting Fevers, we ſhall inquire into the Preſervatives againſt them: Amongſt theſe the *Peruvian* Bark claims the Preference, whoſe Qualities, therefore, and Effects, whether beneficial or noxious, demand a moſt accurate Examination. Firſt, then, it is an Aſtringent; for its Powder, either by itſelf, infuſed with Water, or mixed with highly rectified Spirit of Wine, conſtricts the Tongue: This is farther confirmed by a chymical Experiment, while a Solution of it with Vitriol, like all other Aſtringents, grows as black as Ink: Another of its Principles is a Bitter, of an opening Nature, which is univerſally allowed to be a proper Remedy for Fevers; ſince almoſt all Bitters, ſuch as Wormwood, Cardius Benedictus, Fumitory, the leſſer Centaury, red Gentian-root, and *Virginia* ſnake-root, and Snake-wood, are allowed to be excellent Febrifuges.

The Bark is, alſo, a Balſamic, which is very agreeable to Nature; but this Quality ſhews itſelf, not ſo much by the Taſte and Smell of the Powder, as by a Water drawn from it by Diſtillation, or when mixed with Spirit of Wine. Another of its Principles is, a fixed Earth, as appears after Solution and Extraction; and this Principle, though hitherto overlooked, is of great Efficacy in correcting, blunting, and involving the Acrimony of the febrile Matter; particularly of the bilious Kind, in the ſame manner as earthy Subſtances, Shells, Mother of Pearl, Sealed Earth, and Coral, operate in removing Fevers. This Simple, therefore, according to *Galen*'s Manner of ſpeaking, acts by the Whole of its Subſtance; and it has, beſides, many other Advantages, which are ſeldom or never found in any other Medicine; for which Reaſon they are greatly miſtaken, who confine the Power of this Remedy over Fevers to Aſtringency alone.

From this Theory and Pathology of Fevers, and theſe Qualities of the Remedy, we may ſoon learn the proper Uſe of the Bark, in intermitting Fevers, and how to give it to Advantage. We have already proved the material Cauſe of Intermittents to be, a large Collection of vitiated Bile, and ſalival Juices, mixt with indigeſted Aliments, and lodged in the Primæ Viæ, particularly in that winding Inteſtine the Duodenum; from whence ſucceſſively paſſing, in certain Quantities, into the internal Parts, and nervous Syſtem, it occaſions theſe ſpaſmodic febrile Motions. Our Intention, therefore, in the Cure ſhould be, to correct and blunt this peccant Matter, procure its Elimination, and prevent its further Diſcharge from the Glands, and biliary Ducts; and, in my Opinion, if the Bark does not entirely, it will yet, in a great meaſure, anſwer theſe Intentions.

We grant, indeed, that this Febrifuge is not ſo effectual, when the Primæ Viæ are overcharged with peccant Sordes, eſpecially of the viſcid and tenacious Kind; but rather does Harm, by inſpiſſating and rendering them more immoveable; and, at the ſame time, by its aſtringent Quality, rendering the Patient coſtive; by which means the febrile Matter is not only retained, but the tenſive Pains and Anxieties about the Præcordia are increaſed, as we have often ſeen in thoſe, who have been long afflicted with a Quartan, eſpecially old Perſons and Children, when they have taken great Quantities of the Bark. In this Caſe, therefore, it is ſafer and better to reject this Remedy, or at leaſt, not to uſe it till ſuch others have been exhibited, as conduce to attenuate, incide, and evacuate by Stool, the thick, viſcid, and tenacious Humours. For theſe Intentions, among Salts, we give the Preference to depurated Sal Ammoniac, the digeſtive Salt of *Sylvius*, vitriolated Tartar, the Arcanum Duplicatum, *Glauber*'s Salt, and *Epſom* Salt. Salts, alſo, drawn from medicinal Waters, are very efficacious in removing chronical Fevers, ſuch as the *Sedlitz* and *Egran*; half an Ounce, or an Ounce of which, diſſolved in a ſufficient Quantity of Water, and exhibited as often as the Circumſtances of the Patient require, will cleanſe the Inteſtines from the peccant and viſcid Sordes. The Power, alſo, of Bitters is very great, in inciding, deterging, and evacuating the mucid, tenacious, and acid Juices; among the beſt of theſe we may reckon the Extracts of the leſſer Centaury, red Gentian, and Carduus Benedictus, Wormwood, Rhubarb, and Aloes previouſly corrected and qualified, which, diſſolved in a lixivial aqueous Menſtruum, and given in Wine or Brandy, on the intercalary Day, are very ſerviceable. After theſe, the Bark, with other Remedies aſſiſting its Operation, not only greatly prevents an exceſſive Afflux of the peccant Humours to the Primæ Viæ, but, alſo, promotes and facilitates Perſpiration.

In like manner, when the Crudities ariſing from indigeſted and corrupted Aliments, with the vitiated Bile and ſalival Juice, nouriſh a Fever, Reaſon and Experience convince us, that we ought to purge the Primæ Viæ of theſe acid, bilious, and corrupted Humours, before we uſe ſpecific Febrifuges and Corroboratives. For this Purpoſe, gentle Emetics are proper, or ſuch Medicines as evacuate both upwards and downwards; but we muſt avoid all ſtrong draſtic Purges, and violent Emetics; for theſe being injurious to the Stomach and nervous Parts, weaken the Patient, and rather increaſe than diminiſh the preternatural Commotions. For this Purpoſe I would recommend an Ounce or two of Manna, with a Grain or two of emetic Tartar, gently diſſolved in a ſufficient Quantity of Spring-water; which Medicine operates efficaciouſly enough, both upwards and downwards; and, as I am aſſured from long Experience, anſwers the End propoſed. After theſe Meaſures are duely taken, the Bark may be exhibited with the greater Succeſs.

On the contrary, there are many Species of Fevers, ſuch as the bilious Summer Quartans and Tertians, thoſe of the double and continual Kind, accompanied with fevere and cruel Symptoms, which proceed from an intemperate, ſharp, hot, and volatile Bile, generally after a long-continued, hot, and dry Seaſon.

Seaſon. In theſe Caſes, after a few Fits, the Bark, eſpecially in Powder, mixed with abſorbent and nitrous Medicines, will be of Service in fixing, correcting, and blunting this Matter, and preventing too copious an Afflux of it to the Inteſtines: Thus have I known great Advantages produced by plentiful bilious Stools, eſpecially in bilious choleric Conſtitutions; for the Fever has ſoon after left them.

As what I have already ſaid, is ſupported by Experience, ſo I can, upon the ſame Foundation, aſſert, that the Bark ſupports and promotes Perſpiration; which, if not the principal, is certainly a very material Step towards the Cure of intermitting Fevers. For when this ſalutary Evacuation, as I before obſerved, is ſuppreſſed, and the Sordes, which ſhould be diſcharged by it, are convey'd to the internal Parts, it gives the firſt Riſe to theſe Fevers, which bear a Proportion to the Quantity of bilious Sordes retained in the Blood and Humours. Then theſe Sordes, on account of the inconſiderable Excretion upon the intervening Day, being collected in a greater Quantity, produce a Return of the Fit. Relapſes, alſo, proceed from a Retention of the *febrile Matter, which generally happens, when the Patient, too* ſoon after Recovery, expoſes himſelf to a cold humid Air, near ſtagnating Waters, in low Places, or in vaulted Churches, or to the North Winds. It muſt, likewiſe, be attributed to the greater Freedom of cuticular Excretion in the Summer, that Summer Tertians and Quartans are more eaſily cured, than thoſe of the autumnal Kind; and that Quartans, which have continued all the Autumn, Winter, and Spring, go off ſpontaneouſly about the Summer Solſtice, without any Medicines. And this will account for ſome Inſtances, produced by Authors of undoubted Credit, where obſtinate Fevers have been cured by bare Exerciſe, as Running, Leaping, Riding, or by hot Baths, and drinking Wine till the Pores were opened.

So great is the Uſe and Neceſſity of Perſpiration in the Cure of Fevers, that it is incumbent on us to ſhew, that the Bark is endued with a Power to promote it. For its aſtringent Quality ſeems adapted to produce a contrary Effect; and it is commonly thought, that it obſtructs the Pores, and prevents Perſpiration. But we do not aſcribe an abſolute and poſitive aſtringent Quality to the Bark, but rather eſteem it a Corroborative, in conſequence of its bitter and balſamic Principles.

For though aluminous and vitriolic Subſtances, Snake-root, and the Roots of Tormentil and Biſtort, are very aſtringent, yet they prove efficacious in intermitting Fevers, if they are ſeaſonably, and after a proper Regimen, exhibited, eſpecially drinking a warm Decoction, or Infuſion, after them, and uſing proper Exerciſe. But the Power, Nature, and Virtue of Corroboratives are far different, ſince theſe act not ſo much by their terreſtrial and aſtringent, as by their balſamic and bitter Quality; upon the weakened Solids of the Body, by procuring to them Strength, Tone, Vigour, and a motive Faculty, that thus the Motion of all the vital Fluids, which principally depends upon that of the Solids, may be rendered quicker, and more expeditious, through the whole Habit; which always produces a greater Excretion of Matter, by inſenſible Tranſpiration; ſo that Corroboratives are much ſafer than Aſtringents. And, indeed, among the Simples of a corroborative and ſubaſtringent Quality, thoſe are beſt and moſt efficacious in curing obſtinate and inveterate Diſorders, which have ſomewhat of a balſamic Virtue. Hence Decoctions of the vulnerary Herbs, ſuch as Strawberries, Sanicle, Baum, Agrimony, Scabious, Horehound, Lung-wort, Liver-wort, Spleen-wort, Scolopendrum, Money-wort, Plaintain, Yarrow, the Flowers of Daiſies, and St. John's-wort, and Tree Lung-wort, have an univerſal and ſurpriſing Effect, not only in the Cure of Wounds, but, alſo, of inveterate and almoſt incurable Diſeaſes, ſuch as the Cachexy, Conſumption, Scurvy, Jaundice, Spitting of Blood, and ſometimes a Quartan, by depurating the Blood, opening the obſtructed Viſcera, and promoting the languid Excretions; they do not, however, act immediately upon the Fluids, by correcting their Diſorders; but rather upon the Solids, by reſtoring their Tone and Vigour. Nor are we now unacquainted with the Power of Caſcarilla, which is hotter and leſs balſamic than the *Peruvian* Bark, in ſtopping exceſſive, and even dyſenteric Fluxes; and, when properly applied, is of Service in intermitting, and, likewiſe, ſlow Fevers, which proceed from a Fault of the Stomach, or a Weakneſs of the Digeſtion.

The *Peruvian* Bark, then, is ſo remarkably ſalutary, that by ſtrengthening the Tone of the Solids, it promotes the Circulation of the Blood, the various Excretions, and particularly, inſenſible Perſpiration. Hence we learn from Experience, that by the Uſe of it the Strength is reſtored, Vigour of Body and Mind recovered, loſt Appetite revived, with an abſolute Ceſſation of the febrile Paroxyſms. Other celebrated Phyſicians have obſerved the ſame remarkable Effects produced by it: Thus *Liſter*, *Bohnius*, *Sydenham*, *Decker*, *Bergerus*, *Jones*, *Merton*, and *D'Aquin*, unanimouſly declare, that the Bark in an extraordinary manner corroborates the Stomach, quickens the Appetite, increaſes the languid Heat of the Body, reſtores the Strength, and not only promotes Perſpiration, but, likewiſe, Urine, and ſometimes renders the Body ſoluble, eſpecially if it be freſh. And, at laſt, they judiciouſly add, that all who have found this Effect from the Bark in Fevers, have continued free from the Diſorder, and been afflicted with no Symptom or Inconvenience ariſing from it. But we muſt take notice, that theſe ſalutary Operations are not derived from the increaſed cuticular Excretion alone. For I have not only often obſerved, that, after a plentiful and continual Sweat on the intercalary Days, the Fit has nevertheleſs returned, without any Increaſe of Strength or Appetite; but am, likewiſe, convinced from Experience, that ſtrong Sudorifics are not proper and conducive to ſtop febrile Paroxyſms. For there is a great Difference between Sweat, which often proceeds from a Want of Strength, and decayed Tone of the Skin; and an augmented Perſpiration reſulting from a briſker and quicker Circulation of the Blood through the whole Body: This latter may be diſtinguiſhed by the Vigour and Equality of the Pulſe. And theſe Effects are *not ſo much produced by Sudorifics, which excite* an hot inteſtine Motion in the Blood, as by thoſe Medicines which reſtore and corroborate the Tone of the Solids, Heart, and Veſſels; among the Number of which Remedies, we may juſtly reckon the *Peruvian* Bark.

Nor am I of Opinion, that this Remedy alone does, at all Times and Seaſons, by corroborating the Solids, increaſe the Circulation of the Blood, and Perſpiration, in thoſe who labour under Intermittents; but it is very neceſſary, that the Body ſhould be duly prediſpoſed, the Paſſages and Tubes of the Excretories open, and not obſtructed by Spaſms, the Humours thin and fluid, not thick, viſcid, and immoveable, and the Virtues of the Remedy entire, and neither blunted nor weakened by the peccant Humours of the *Primæ Viæ*. For the Effect of our Bark is the ſame as that of well-prepared Chalybeates, which, alſo, by corroborating the Tone of the Solids, and thus promoting an univerſal Circulation of the Blood and Humours, are of very great Efficacy in curing inveterate and obſtinate Diſeaſes: They do not, however, always produce theſe happy Effects, but only when the Fluids and Solids are duly diſpoſed to promote the various Excretions. Since, therefore, Chalybeats, by ſtrengthening the Solids, promote Perſpiration, the Reaſon is evident, why chalybeated Flowers of Sal Ammoniac, as, alſo, thoſe prepared with Blood-ſtone, duly exhibited either in Powder, or reduced to an Eſſence with Spirit of Wine, ſubtile Crocus Martis, and ruſty Filings of Steel reduced to a Powder, and properly exhibited, have the ſame Effect as the Bark, in ſtopping and even removing febrile Motions; but on the contrary, prove highly prejudicial, when indiſcriminately preſcribed, without any regard to Time, or the Habit, Conſtitution, and peculiar Circumſtances, of the Patient.

Hence it may poſſibly ſeem ſpecious to urge, that, perhaps, it would be ſafer, and more reputable for a Phyſician, not only in the Cure of various Diſeaſes, but, alſo, of Intermittents in particular, to abſtain entirely from the Uſe of ſuch Medicines, as require ſo exact a Circumſpection, to prevent them from being miſchievous; and rather commit the principal Buſineſs of the Cure to Nature, adminiſtering theſe only, which correct the Intemperance of the Humours, and render them ſufficiently moveable and fluid. But this Practice is not always ſafe and beneficial to the Patient; for Experience teaches us, that Intermittents are ſometimes ſo obſtinate and ſtubborn, that tho' an exact Regimen has been obſerved, and ſafe and ſelect Remedies uſed, which not only correct and dilute, but, alſo, gently evacuate, and after the Paroxyſm excite a Diaphoreſis, they yet continue for ſeveral Months, and ſometimes a whole Year, and longer, emaciate the Body, and entirely exhauſt the Strength. Beſides, tho' the Violence of the Fever is in the mean time abated by theſe Medicines, yet on account of the great Weakneſs brought on by its long Continuance, and which, according to *Celſus*, happens in all Diſeaſes, by any ſlight Error in Diet, or Regimen, gentle febrile inconſiderable Paroxyſms eaſily return, or other Diſeaſes, ſuch as a Cachexy, and ſlow Fevers, are produced, eſpecially if the Patient eats liberally; ſo that, even the Enemies of the Bark, and *Baglivi* himſelf, are forced to own, that in the End, when the Fever has for a long time preyed upon the Strength, the Bark may be uſed to ſtrengthen the Stomach, and the whole Body. And certainly there are many, and thoſe conſiderable Diſorders, eſpecially ſuch as ariſe from a Redundance and Impurity of the Juices, which might be ſucceſsfully cured without Phyſic, by Abſtinence and Hunger alone; but as many are unwilling to undergo ſuch a Degree of Mortification, recourſe muſt be had to Veneſection, which is far leſs ſafe than Abſtinence. Care, muſt, therefore be taken to avoid dangerous and prejudicial Meaſures.

Another Argument brought by many learned Phyſicians againſt the Bark is, that its aſtringent and corroborating Qualities ſuſpend the febrile Commotions and Paroxyſms, but do

not remove the material Cauſe of the Fever, which afterwards induces Relapſes, or other more terrible Diſeaſes. But we have already proved, that the *Peruvian* Bark is of ſuch a Nature, as, when exhibited duly, in a proper Order, and in Conjunction with other ſuitable Remedies, to remove the Cauſe of the Fever, by promoting Perſpiration, and reſtoring the due Tone of the Solids. Beſides, there are Caſes, where it is expedient to check and remove, for a time, morbid, and even febrile Commotions, leaving the Cauſe to be afterwards ſubdued. For ſometimes the Fits are ſo violent, for Inſtance, in a continual and double Tertian, that the Strength being conſumed by Watching, and long-continued exceſſive Heat, the Patient becomes incapable of ſupporting the Diſeaſe any longer. Here then it is very ſerviceable, and indeed neceſſary to ſuſpend theſe dangerous Commotions for a time, that Remedies (both of the correcting and evacuating Kind) may be afterwards more efficaciouſly uſed to remove the Cauſe of the Fever, becauſe the Medicines would either do no Service, or be prejudicial, during ſuch a violent Paroxyſm of the Fever, and ſuch a Perturbation of the Œconomy of the natural Motions and Functions.

But there is another Argument againſt the Uſe of the Bark, which ſeems to carry greater Weight with it, and which is, that many Perſons, as Experience evinces, who have been afflicted with Fevers, have by this Medicine been hurried into dangerous and incurable Diſeaſes, ſuch as ſlow and hectic Fevers, Cachexies, an Aſcites, and Tympanites; in Men, hypochondriac, and in Women, hyſteric Diſorders, and in Children, Convulſions, and Epilepſies. But, though it cannot be denied, that theſe dangerous Diſorders frequently follow Intermittents, yet the Cauſe of this is not evident, and therefore deſerves an accurate Examination. It muſt be obſerved then, that before the Fever the Humours and Viſcera are generally diſpoſed to thoſe Diſeaſes, which may, alſo, in ſome meaſure, be produced by an improper Regimen, Diet, and manner of living, great Perturbations of Mind, and perhaps, alſo, by an unſeaſonable and imprudent Adminiſtration of the Bark, either with regard to the Quantity, or the Time of its Exhibition; ſo that the Perſon who conſiders this State and Condition of things, cannot aſſert, that a proper Uſe of the Bark is the ſole Cauſe of theſe bad Effects, nor even ſuſpect it, as faithleſs and prejudicial.

Beſides, it is ſufficiently evident, that the moſt efficacious Remedies, ſuch as Veneſection, Emetics, Purgatives, Opiates, Mercurials, Chalybeates, Preparations of Gold and Antimony, the volatile Salts of Animals, Laconic Baths, and ſpirituous Medicines, if uſed without Judgment, are equally pernicious and fatal. But ſurely no one can hence infer, that they are of no Uſe in Medicine, and ought to be entirely rejected; but he muſt rather argue thus: Theſe noble Remedies are capable of producing bad as well as good Effects; and, therefore, ſhould be properly uſed. But this Reaſoning is ſtill more applicable to the Uſe of the Bark, which is not to be claſſed among the above-mentioned Medicines, which are of an highly active Nature, becauſe they contain a certain Principle, a ſmall Quantity of which, produces ſudden and great Alterations in the Body; but the Bark acts otherwiſe, and whoever would ſee the Effects of it, muſt take ſucceſſively a large Quantity, even ſome Ounces of it; and we may reaſonably conclude, that the Bark is not unfriendly to Nature, becauſe it may be very ſucceſsfully given in Diſeaſes, where the Strength is decayed, and the nervous Syſtem affected; and for this Reaſon it is very ſerviceable in ſtrengthening the Tone of the Stomach, Inteſtines, and nervous Parts, not only in Fevers, but, alſo, as Experience evinces, in Fluxes, Vomitings, Dyſenteries, hypochondriac, and hyſteric Diſorders, and gouty Pains.

'Tis almoſt univerſally allowed, that, when the Fever is almoſt overcome by the Aſſiſtance of Nature, the Bark may be ſucceſsfully uſed to ſuppreſs habitual febrile Commotions; but that it may be ſafely adminiſtred in the Beginning, after the firſt or ſecond Fit, is principally denied by thoſe who think Nature prudently makes uſe of a Fever, as a Remedy to remove the Cauſes, which endanger Life, being perſuaded, that the wiſe and ſalutary Deſign of Nature is, by this means, diſturbed. But Experience, the beſt Maſter in the Medicinal Art, whoſe Sanction is ſuperior to all Arguments, plainly evinces, that this Fear is unneceſſary. I have known ſeveral Inſtances of Perſons, who, being ſeized with an epidemic Tertian, attended with dangerous Symptoms, have been happily cured by the following Method: After the third or fourth Fit, having taken an efficacious Medicine, which purged both upwards and downwards, they took the following Day, an antifebrile Electuary of the Bark, in proper Quantities, Order, and Time. By this means, after two or three Paroxyſms, they were never ſenſible of another Attack, but perfectly reſtored to Health, eſpecially when, after the Bark, they uſed ſtrengthening, ſtomachic Medicines, and Exerciſe, to promote Perſpiration. And I can poſitively affirm from frequent Obſervation, that a Fever is oppoſed with more Difficulty, and requires greater Caution, when it has continued for ſeveral Weeks or Months, than when the Aſſault is recent; becauſe, the longer the Continuance of the Fever, the greater Quantity of Sordes ariſes from the Diſſolution of the Blood by the hot inteſtine Motion; and this larger Quantity of Sordes is, therefore, corrected and evacuated, with the greater Difficulty.

Of the ſame Opinion are ſeveral eminent Phyſicians, among whom we ſhall only mention *Bohnius*, who in a particular Diſſertation *de Fuga Febrium minus ſuſpecta*, has confirmed this Doctrine by many important Reaſons; and *Bergerus*, who, in his Diſſertation *de Chinchina ab iniquis Judiciis Vindicata*, very juſtly ſpeaks in the following manner: "I cannot approve of *Sydenham*'s miſtaken Caution in ordering, that the Bark ſhould not be too ſoon given, before the Fever has in ſome Degree waſted itſelf by its own Force, leſt the Patient's Life ſhould be brought into Danger, if we ſhould ſuddenly check the Motion of the Blood, cleanſing itſelf by the utmoſt Efforts of a Fermentation." *Padus*, *Donzellius*, *Liſter*, *Morton*, *Jones*, and principally *Bohnius*, with more Reaſon teach us, "That after the Uſe of Evacuants, if neceſſary, and eſpecially of Emetics, at the Beginning, and before the Fever has taken Root, and weakened the Juices, Viſcera, and Strength of the Body, its Force is ſucceſsfully leſſened by the Uſe of the Bark. Here there is no Fear either of Relapſes, or of more Diſorders, which *Baglivi* aſcribes to the Uſe of the Bark; whereas he ought rather to have aſcribed theſe Diſorders to a prepoſterous Cure of the Fever, and the Impurity of the Body, becauſe both Reaſon convinces, and Experience demonſtrates, that, by a proper Uſe of this ſalutary Medicine, both the Cauſe of thoſe Diſtempers, and of the Fever itſelf, are removed; ſo that *Bohnius* declares, that in almoſt infinite Numbers, to whom he gave the Bark at the Beginning, and whom he cured, none were ſenſible of any ill Conſequence from it.

Laſtly, in order to eſtabliſh and confirm the proper, ſecure, and efficacious Uſe of this Medicine in the Cure of Fevers, we ſhall ſubjoin ſome neceſſary Cautions and Admonition, the due Obſervation of which, will prevent any one from doing Miſchief with the Bark.

The Bark, then, ſhould not be given, till the *Primæ Viæ* are cleanſed from that Collection of peccant Humours, with which they abound; and this is beſt performed by deterſive Salts, either alone in due Quantity, or mixed with a proper Laxative, or Emetic. Nor ſhould the Bark be preſcribed, eſpecially in a conſiderable Quantity, if the Viſcera of the Abdomen are obſtructed or infarcted with Blood and Humours, before theſe Obſtructions are opened, and the Infarction removed; which Intention is beſt anſwered by drinking mineral Waters, by neutral and bitter Salts, obtained from hot and cold medicinal Springs, by Preparations of Rhubarb mixed with Salt of Tartar, or the *Terra foliata Tartari*, by Broths boiled with aperient Roots and Herbs, and by proper Motion and Exerciſe of the Body.

Nor is the Cure of an Intermittent to be undertaken by the Bark in a manifeſtly plethoric, cacochymic, cachectic, and hypochondriac Patient, or when the critical Evacuations of Blood are ſuppreſſed; but it is far better by ſeaſonable Veneſections, by temperate balſamic Elixirs, by the *Pilulæ Balſamicæ Polychreſtæ*, and the Interpoſition of bitter neutral Salts, to remove Obſtructions, and employ the febrile Commotions, which ought never to be ſuddenly checked, as Medicines adapted to remove theſe Diſorders.

Greater Caution is neceſſary, if the Patients to whom this Febrifuge is to be given, have their Strength and Blood exhauſted; if they are obnoxious to exorbitant Paſſions; if they are old; and if the Fevers themſelves approach to a continual hectic, or a ſlow Fever; if there is an exceſſive Coſtiveneſs; if the Urine is limpid, and without any Sediment; if the Hypochondria are tumid, and an autumnal, or winter Fever, has already been long protracted; for, in ſuch Caſes, it is more expedient to moderate the febrile Commotions, if there are any, by gently evacuating and corroborating Medicines, till at laſt, as it frequently happens, the Fits ſpontaneouſly ceaſe, either by a Change of Place, a more exact Regimen, and Method of Living, or a wholſome, light, ſerene, and warm Air.

Since it is of great Importance to the proper and ſalutary Uſe of the Bark, in what Form, Doſe, Seaſon, and under what Regimen, it is exhibited, we muſt obſerve the following Cautions: 1. As to the Form, we ought above all to chooſe a pure, ſolid, well-taſted Bark, without any muſty, vapid Smell. This, being reduced to a very fine Powder, is moſt commodiouſly given in Subſtance, without any Addition, in any proper Vehicle. But, if any one abhors the Powder, it may be made up into an Electuary with Water and Sugar, and then ſwallowed. I can poſitively affirm, that I have found the Bark, given in this plain Method, better, and more effectual, than when mixt with

many other Ingredients, and reduced into a Variety of Forms. When there is a manifeſt Weakneſs of the Stomach, accompanied with a Loathing of the Powder, it may be infuſed either in Water or Wine, edulcorated at Pleaſure, prepared with a little Cinnamon to render it palatable, and which may be drank either warm or cold. Beſides, if the Fever is of the bilious Kind, attended with great Heat, it is better to give the Powder mixt with a fourth Part of purified Nitre. But when, from a Suſpicion of an Obſtruction and Infarction of the Viſcera by viſcid and crude Humours, its too ſtrong Aſtringency is to be dreaded, whether it is given in a ſolid or a liquid Form, lixivial Salts muſt be added, eſpecially thoſe of the alcaline Kind; which powerfully correct and ſubdue the aſtringent Quality of the Bark. For anſwering this Intention, a moſt ſecure corroborating and antifebrile Liquor may be ſoon prepared, by boiling an Ounce of the Bark with two Drams of Salt of Tartar, in a Pint of Water diluted with Wine. I have, alſo, uſed the followiog Electuary with very great Succeſs:

Take of the Rob of Elder, one Ounce; of *Peruvian* Bark, ſix Drams; of the Extract of common Chamomile-flowers, of depurated Nitre, and of diaphoretic Antimony, each one Dram and an half; and of the Julap of Roſes, a ſufficient Quantity.

2. As to the Doſe of this Specific, it is never to be given in an exceſſive Quantity, ſuch as a Dram or more at a time; but it will be more adviſeable to give, at different times, one or two Scruples only on the intercalary Day, after the Fit, every three Hours, drinking after it a ſufficient Quantity of Water, Decoction, Broth, or Beer. It may, alſo, be exhibited with the Aliments. But Motion and Exerciſe are very great Aſſiſtants to the Operation of this Medicine, as they promote Perſpiration, which is very conducive to the removing a Fever, and preventing a dangerous Stricture of the Solids, or a Coagulation of the Humours.

3. As for the Time, we ought to perſiſt in this Method of Cure, at leaſt for a Week: Then the Fever being gone, and the Appetite returning, a Doſe ſhould be taken once every Day, and after that every other Day.

There are ſtill further Cautions to be obſerved in the Uſe of the Bark in intermitting Fevers: For,

1. During the Uſe of this Medicine, if the Patient is coſtive, his Body muſt be rendered ſoluble, only by an emollient and gently ſtimulating Clyſter; but not by Purgatives, for fear of a Relapſe, becauſe, by the Uſe of theſe, Perſpiration is obſtructed, and the Afflux of the excrementitious Humours recalled to the Inteſtines. But afterwards Manna with Cream of Tartar may be uſed, as, alſo, my balſamic Pills, or thoſe of *Stahl*, or *Becher*, with ſome aperient Salt, given at proper Intervals, during the Intermiſſion, and towards the End, of the Diſorder, in ſuch a manner, however, that after the Uſe of theſe Laxatives, a Doſe of the Electuary may be again given.

2. When the Fever is gone, the Body ſhould be kept in a free Perſpiration; for which Reaſon, cold Air, North Winds, and all external Cold, together with moiſt and low Places, are to be avoided; and bitter ſtomachic and corroborating Elixirs, ſuch as my balſamic Elixir, muſt be uſed; which being taken in the Morning, or at Noon, not only contribute greatly to ſtrengthen the Stomach, but, alſo, to promote Perſpiration.

I muſt now briefly mention the Fate this Diſſertation has met with. There was publiſhed at *Francfort* upon the *Oder*, a Diſſertation, directly oppoſite to ours, wherein the well-known Author, out of a Spirit of Contradiction, very poſitively aſſerts, and ſupports the Aſſertion with idle trifling Arguments, that the *Peruvian* Bark, though uſed with the utmoſt Caution, is a faithleſs, dangerous, and noxious Medicine. I thought it not worth my while avowedly to oppoſe this Writer, becauſe the Judicious and Skilful in the Healing Art will ſoon diſcover the Weakneſs of his Argumentation: For the ſake, however, of young Phyſicians, who are eaſily confounded by a Diverſity of Opinions, I have been induced to make ſome Remarks on that Performance.

The whole Weight of the Reaſoning in this Diſſertation is founded on the famous *Stahlian* Hypotheſis, which is, that the rational Soul produces theſe febrile Commotions for a ſalutary End, in order to eradicate the Cauſe of the Fever out of the Body; and that they are, therefore, by no means to be ſuppreſſed, eſpecially by Aſtringents, among which the Bark is certainly to be claſſed. But, as I had in this Diſſertation previouſly overthrown this Opinion, I am the more ſurpriſed, that the Author ſhould, upon a bare precarious Hypotheſis, totally deny, and utterly reject, the Truth of Facts, vouched by the Authority of the moſt celebrated Phyſicians of all Nations in *Europe*, and which palpably evince, that the *Peruvian* Bark may be ſucceſsfully and ſafely uſed in chronical Fevers, which can be cured with no other Remedy. For it is a very unphiloſophical Procedure, to judge of Experience, and meaſure the ſalutary Uſe of a Medicine, by imaginary Hypotheſes, and the pageant Force of abſtract Reaſonings, ſince we ſhould rather inquire firſt into the Truth of a Fact, and then examine the Reaſons, and by theſe means eſtabliſh the Hypotheſis. Let this great Author, therefore, as it is incumbent on him, demonſtrate, that the Bark, even cautiouſly and circumſpectly given, has, without Diſtinction, and at all times, been detrimental in Fevers. As for my own Experience, in above fifty-five Years Practice in different Places, and particularly in *Weſtphalia*, where the Inhabitants are plethoric, I dare confidently affirm, that neither incurable Diſeaſes, nor Relapſes, have occurred to me, from giving the Bark prudently, and not in too great a Quantity, eſpecially, if it was exhibited under a proper Regimen; ſo that I have rather obſerved the evident and ſecure Effects of it. I have myſelf been three times afflicted with a very obſtinate intermitting Fever; and, after a fruitleſs Application of all other Remedies, was perfectly recovered by a proper Uſe of the Bark alone; whereas the Cures of intermitting Fevers, undertaken by other Phyſicians without the *Peruvian* Bark, or that of Caſcarilla, have more than enough convinced me, that the Patients have not only been racked for a long time, but often hurried into violent chronical Diſtempers; and, what is very ſurpriſing, theſe very Contemners of the Bark have at laſt been obliged to have recourſe to it, as their only remaining Refuge.

But, in order to ſhew from Reaſon, whether, as is falſly aſſerted, the Bark, even properly uſed, by its aſtringent Quality, depreſſes the febrile Commotions, without removing the Cauſe of the Fever, it will be neceſſary to examine very cloſely into the Manner of its operating. The Bark, then, contains fixed, terreſtrial, aſtringent, and bitter Particles, by which it exerts its antifebrile Virtue. But who in his Senſes does not perceive, that in theſe Principles of the Bark there is a natural Remedy, if properly uſed, to infringe the ſubtile cauſtic Acrimony of the Bile in the *Primæ Viæ*, from whence epidemic Tertians principally ariſe, before it is convey'd to the Maſs of Blood, or from thence to the Nerves, and throws the whole nervous Syſtem into violent ſpaſmodic Contractions? Further, ſince every one allows a ſtrengthening Principle in the Bark, which binds up the relaxed Parts, and corroborates thoſe that have loſt their Tone, it is not to be wonder'd at, that from the Increaſe of Perſpiration, eſpecially on the intercalary Day, the remaining Sordes, which afford Matter for a new Paroxyſm, ſhould be entirely evacuated, and the whole Impetus of the Fever, by this means, deſtroy'd.

Now we readily grant, that this Medicine will prove very detrimental, and even bring on worſe Diſeaſes, if improperly adminiſtred, without any regard to an accurate Hiſtory of the Diſtemper, the Conſtitution of the internal Parts, the Cauſe of the Fever, and other morbid Diſpoſitions and Circumſtances, as the Time, Order, and Doſe, in which the Medicine is exhibited. But, ſince it is unreaſonable to argue in the manner I have already mentioned, it neceſſarily follows, that the Bark, when properly applied, is beneficial, and, when improperly, pernicious; for, if the Bark, given in large and too frequently repeated Doſes, finds Obſtructions of the ſmall Veſſels in the Viſcera, and a Redundance of viſcid Humours in a Body diſordered through the dull and languid State of the moving Fibres, in this Caſe, by its aſtringent and incraſſating Quality, it may increaſe the Diſtemper, and excite violent chronical Diſeaſes.

Thus much I thought proper to ſay at preſent, to convince every one, that the Bark is not ſo dangerous and terrible a Remedy in Fevers, and other Diſtempers, as ſome imagine, but ſafe, efficacious, and innocent, eſpecially in the Hands of one, who adminiſters it with Judgment and Reaſon; and that the bad Effects of it do not proceed from the Medicine itſelf, but ſhould be deſervedly attributed to the improper Uſe of it, or the Errors of the Patient, or a Neglect of removing the peccant Reliques. However, I would adviſe thoſe, who are not complete Maſters of the Healing Art, to refrain wholly from all heroic Medicines, and even the Bark itſelf, leſt they ſhould do more Injury than Good. *Hoffman.*

Mr. *Ruſhworth*, a Surgeon, in *Northampton*, ſent a printed Letter to the Maſter and Governors of the Surgeons Hall in *London*, dated *October* 18. 1731. in which he gives the following Account of his uſing the Bark in Mortifications.

In the Year 1715. *I was ſent for to a Man who had a Mortification on the Foot, from an internal Cauſe. The Fever was very high, attended with an irregular Pulſe, as is uſual in that Caſe. I made deep Inciſions in the mortified Part to the Bone, and ſcarified all around as far as there was any Inflammation, and uſed the common Applications; upon which the Fever abated, the Pulſe became not only calm, but, alſo, regular; and in a few Days I had a Digeſtion at the Edges: I was obliged to leave*

it

it to the Care of an Apothecary; but in a short time I was sent for again, the Fever being returned, and the Part mortified higher: I used the same Method as before, with the same Success; but all the former Symptoms returned the third time; but, upon repeating the same Method again, ceased. I thought it to no Purpose to take off the Leg, having too often found Returns after it, the Fault being in the Blood and Juices. But Providence now first directed me to order the Bark in this Case (while there was a Remission of the Fever); it answered beyond what I expected, the Fever no more returned; the Leg was taken off; and I saw the Person well and lusty many Years afterwards; and I have since several times had the Experience of the good Effects of it in the like Cases, which has been no small Satisfaction to me.

Mr. *Rushworth* reprinted this Letter, adding another to Serjeant *Amyand*, dated *August* 5. 1732. in which he says, *I beg Leave just to mention, that leaving off the Bark too soon, a Patient of mine had a Return of the Mortification, in about five Days time; but, scarifying, and repeating it, I presently had the good Effects of it again, and she is now perfectly recovered; and though she had a very ill Habit of Body before, is now much better than she had been for several Years, and her Looks shew it to all that knew her before, though she is fifty Years of Age.* In Page 35. of the same Pamphlet, he says, *It 'is necessary, that I intimate to all Surgeons what I have mentioned to our Company, that I would not be misunderstood by my printed Letter, as if the Bark would answer in Mortifications from all internal Causes; for in some it is not proper, as Surgeons may easily suggest to themselves.*

In the same Pamphlet is a Letter from Serjeant *Amyand*, dated *July* 29. 1732. giving Mr. *Rushworth* the following Account of his Success in exhibiting the Bark in Mortifications.

I am now to acknowledge yours of the 17th Instant, and to acquaint you, that from your Example, I have given the Bark in all Mortifications with such Success, as has encouraged the Gentlemen you mention, to administer it. I have now under my Care a Gentleman of Seventy-eight, who owes his Life to that Medicine. His Case was at first a Gangrene after a Phlegmon; the usual Means seemed to have removed the Danger; but the Fever continuing without Remission or Intermission, a Sphacelus soon appeared, of which nothing stopped the Progress, till the Bark was used; and in twenty-four Hours, or less, the Separation began, with a laudable Pus. The same thing happened to a Jew, whose Sphacelus had got Ground for three Weeks, in spite of all Means, where several Surgeons were concerned.

I have now used it in seven Cases, the Circumstances in each being different; and yet, in all, the Bark has taken Effect; even within these few Days, to *Mr.* Delenor, *who kept the Bagnio in* St. James's-Street, *in whom a Mortification happened after several Punctures in dropsical Legs. The Bark stopped the Progress in less than twenty-four Hours, and the Sloughs began to separate; but the Patient having a Jaundice, and being spent with Evacuations, it revived, and came to the other Leg; of which though he died, yet the Power of the Bark was so plain, that from this and the other Cases, I think it is evident, that we may be as sure of getting the better of, or at least of stopping a Mortification from an internal Cause by the Bark, as conquering an Ague thereby. I am,* &c. Claud Amyand.

Mr. *Rushworth* gave the Bark in the Remission of the Fever, Mr. *Amyand*, in the Height of a Fever, yet it had the same Effect; which shews the Difference between these Sorts of Fevers and Agues; in which last it is known to every body, that the Bark does Harm, if given in the Fit. Mr. *Rushworth* says, the Bark will not answer in all internal Mortifications: Serjeant *Amyand* asserts from Experience, that it will answer in all internal Mortifications. Mr. *Rushworth* discovered this extraordinary Effect of the Bark in the Year 1715. and communicated it, as he says, to several Physicians and Surgeons; yet we never heard any thing of it, till it was lately brought into Practice by Serjeant *Amyand*. Neither Serjeant *Amyand*, nor Mr. *Rushworth*, have given any Account of the Dose they gave of the Bark, how often they repeated it, or how long they continued it.

Mr. *John Douglas* gives the following Case, by way of Instance, of the Effects of the *Peruvian* Bark in Mortifications.

April 22. 1732. I was sent for about fifteen Miles out of Town, to visit a Gentleman a little turn'd of Fifty, where I met Dr. *Newington*, of *Greenwich*, and Mr. *Wade*, Surgeon and Apothecary, of *Bromley*. Upon Examination, I found the Back of his Right Foot mortified near the middle Toes, about the Breadth of a Shilling, the Small of the same Leg being pretty much tumefied, and pitted a little in some Places; his Pulse quick, and his Tongue dry. Upon Inquiry, whether he had received any Bruise, Wrench, or Wound, he answered,

Not, as he remembered; but some Persons about him talked of a strait Shoe, which he had complained of some time before, which there was no Stress to be laid on: Therefore, we were all of Opinion, that it proceeded from an internal Cause. The Dressings being prepared, I began to scarify on the mortify'd Part, and cut to the Bones without giving him any Pain. I then continued the Incisions through the Skin all over the Back of the Foot, which was a little tumefied, without his discovering the least Sense of Feeling; which did not a little surprise me, the Skin looking perfectly fair: I then went on all over the fore Part of the Small of his Leg, whence we had a considerable Discharge of a Sort of a bloody Water, but there was still no Sensation: Therefore, I proceeded as high as the Gartering below the Knee, when he began to complain a little, and pure Blood followed the Knife. His Limb was then well stuped with a strong Fomentation, and the Wounds dressed with Pledgets armed with Digestive, and dipped in hot Oil of Turpentine; over them was applied a Poultice made of Oatmeal, stale Beer, and *London* Treacle.

He was then carried to Bed, and the Doctor wrote thus:

Take of *Raleigh*'s Confection, half a Dram; compound Powder of Crabs-claws, and the Root of *Virginian* Snake-weed, half a Scruple; the Confection of Alkermes, a sufficient Quantity to make the Whole into a Bolus; to be taken every fourth Hour, drinking after it four Spoonfuls of the following Julap.

Take of the Waters of Milk, black Cherries, and Treacle, each three Ounces; of the Syrup of Saffron, six Drams: Make them into a Julap.

Let him drink plentifully of Whey, and alterative Treacle-water.

As soon as we withdrew into another Room, the Company asked me, What I thought of the Gentleman's Case? I told them, I thought he was in very great Danger, not only as it proceeded from an internal Cause, but because it had spread so far in so little time.

April 23. Serjeant *Dickins*, and Mr. *Cheselden*, having been sent for, came down this Morning; and, after they had seen and examined the Patient, they told him, that every thing had been done for him which was proper; that the Progress of his Disease appeared to be stopped, and that he had nothing to do but to go on in the same Method.

The 24th, his Pulse was much the same as before, and the Mortification did not seem to spread.

Dr. *Newington* wrote as follows:

Take of *Raleigh*'s Confection, and Lapis Contrayervæ, each a Scruple; Syrup of Saffron, enough to make them into Bolus; to be taken every fifth Hour, drinking after it four Spoonfuls of the Julap above prescribed.

April 25. his Fever was high, his Tongue dry, and the Mortification began to spread a little. I scarified it deep, and dressed warm.

On the 26th, I could not perceive, that the Mortification had made any further Progress.

The Doctor wrote thus:

Take of the common Decoction for Clysters, eight Ounces; Oil of Chamomile, and Syrup of Violets, each two Ounces: Inject this Clyster in the Evening.

Take of the compound Powder of Crabs-claws, a Scruple; *English* Saffron, and *Raleigh*'s Confection, each half a Scruple; Syrup of Cloves, enough to make them into a Bolus; to be taken every sixth Hour, drinking after it four Spoonfuls of the following Julap.

Take of alexiterial Milk-water, and Mint-water, each four Ounces; of Treacle-water, three Ounces, Syrup of Saffron, six Drams: Make them into a Julap.

The 27th, his Fever increased, and the Mortification spread cross the Toes, towards the Ball of the Foot, which I scarified deep, and dressed as before.

On the 28th. the Mortification still got Ground; therefore I had recourse to the actual Cautery, with which I burned, where-ever it was corrupted.

Next Day I found no Benefit from the actual Cautery; for the Mortification increased; so that I told those about him, I had no Hopes of his Life. They immediately replied, What! Would not taking off his Limb save him? No, I said, I did not think it would; but advised to send for the two Gentlemen they had consulted before.

On the 30th, in the Morning, Dr. *Newington*, Serjeant *Dickins*, Mr. *Cheſelden*, Mr. *Wade*, and myſelf, met in his Chamber; and found his Fever very high, and his Tongue exceſſively dry, his Viſage wild, a great Drought upon him, very reſtleſs, the Mortification ſpread as far as the *Tendo Achillis*; and he complained, alſo, of an Hardneſs and Pain in one Side of his Belly. After withdrawing, we were all of Opinion, that taking off his Limb would be of no Uſe; and that, in all Probability, he could not live twenty-four Hours longer.

Upon this, Serjeant *Dickins* adviſed the Trial of the Bark, which he ſaid had been highly recommended to him by Serjeant *Amyand*, in ſuch Caſes. Mr. *Cheſelden* was of Opinion, that it would do no Harm; but added, that he had never heard of its being ſerviceable in ſuch Complaints; nor did he believe that this, or any other Medicine, would ſucceed, in the preſent Caſe. Since it was the extreme Remedy, I was for having it given as ſoon as poſſible. That Evening it was given, in the following manner:

Take of the fineſt Powder of *Peruvian* Bark, half a Dram; Confection of Alkermes, enough to make them into a Bolus: To be taken every fourth Hour.

May 1. I returned about Noon, and found a ſurpriſing Alteration to the better: His Pulſe was calm, his Tongue moiſter, the Wildneſs of his Countenance gone, and he ſaid he had reſted much better than any other Night, from the Beginning of his Diſorder. When I opened his Leg, I found the Mortification had made no further Progreſs; he had then taken but four or five Doſes of the Bark.

Next Day he was ſtill better, and we had a ſmall Diſcharge from the Sore: He had five or ſix ſmall Stools, but we ſtopped the Purging, by adding three Drops of liquid Laudanum to each Bolus of the Bark.

On the 3d I found two large Abſceſſes formed, one on each Ancle: The innermoſt being biggeſt, I opened it firſt, and had about four or five Ounces of good Pus; then I opened the other, and found near the ſame Quantity of Matter: I could now thruſt my fore Finger, with Eaſe, through, from the internal to the external Wound, between the Tendo Achillis, and the Bones of the Tarſus, notwithſtanding the outermoſt Tumor ſubſided but very little after opening the innermoſt.

Thus the Violence of the Fever being taken off by the Bark, Nature was enabled to form theſe Abſceſſes, which was an infallible Sign that the Progreſs of the Mortification was ſtopp'd. We then order'd the Bark ſhould be given only every ſix Hours.

Next Day I found his Pulſe higher, his Tongue a little dry, and the Diſcharge rather leſs than the Day before; therefore we ordered the Bark to be given every four Hours, and a Glaſs of Madera Wine after it.

On the 5th I found his Pulſe regular, the Digeſtion plentiful and laudable, his Countenance ſerene, with other favourable Symptoms; but the next Day I found him very uneaſy, and his Pulſe quicker; and, upon Inquiry, I found this Alteration proceeded from his Mind being ruffled by his Lawyer, about his Will.

On the 7th I found the Symptoms favourable; on the 8th his four little Toes being entirely mortified, I cut them off; and, next Day, I cut off his great Toe, and deſired him to eat and drink more freely.

On the 14th every Symptom continued favourable, the Diſcharge from the Wounds was plentiful and laudable, a total Separation was now made between the living and the dead Parts, and the Sloughs were hanging, like Tatters.

On the 18th he had two large Stools in the Morning, and a great Diſcharge from his Wounds, which I thought weakened him; therefore we ordered a Mixture, with *Confectio Fracaſtorii*, to be taken, in caſe he had any more Stools; and, alſo, to add liquid Laudanum to his Boluſes of the Bark.

On the 20th I laid open a large Sinus above the inner Ancle. On the 24th Mr. *Wade* and I agreed to give him the Bark every ſix Hours only.

On the 28th they ſhewed me an œdematous Tumor on the Back of his other Foot, upon which, we ordered him to take no more Bark, and drink a little more freely of Wine. He had now taken the Bark every four Hours for twenty-three Days, and every ſix Hours for five Days, in all, about ten Ounces.

Next Day I ordered his Left Foot to be waſhed well with hot Water, Bran, and Soap, every Morning, to get off the Dirt, and ſcaly Foulneſs, which obſtructed Perſpiration: We, alſo, ordered him ſome bitter Draughts, to be taken three times a Day.

On the 30th I found the œdematous Swelling of the Left Foot leſſened; and I deſigned to have purged him, but that he had two or three natural Stools: Next Day I found him hearty, and the Wound in good Order; therefore I took off the Bone of the *Metatarſus*.

June 2. an old Gentleman, who came to viſit him, took a great deal of Pains to prejudice him againſt our Proceedings. On the 3d I found an Impoſtumation about the fore and middle Part of his Leg; but I was obliged to bring Serjeant *Dickens*, next Day, to perſuade him to ſuffer it to be opened; with which he did not comply without Reluctancy. I made an Inciſion about two Inches long, and had a Diſcharge of three or four Ounces of Matter. On the 5th I carried him ſome Spaw-water, to drink with his Wine.

On the 7th I cut off another of the metatarſal Bones; and, on the 9th, I cut into the Joint of one of the metatarſal Bones, to haſten its Separation. On the 15th I cut into the Sloughs in the Foot, and let out a great deal of viſcid Matter; and then ſnipp'd off all the looſe Rags of Sloughs; upon which, I diſcovered a large Fungus, which had thruſt forth under the Sloughs, from the tarſal Bones.

On the 16th I cut off the Remainder of the metatarſal Bones, and ſprinkled the Fungus with red Precipitate. On the 19th I perceived the Tibia bare about the middle; a large Sinus, and a conſiderable Diſcharge: The Sinus I laid open on the 21ſt; and on the 22d I laid open a ſmall Sinus on the Back of his Foot. There was a large Diſcharge from his Wounds, which weakened him, and leſſened his Appetite. The next Day the Diſcharge was very fetid, and in too large a Quantity; and, on the 24th, it ſeemed rather to increaſe, and his Strength to decreaſe: Nevertheleſs, I laid open two more Sinuſes. On the 25th the Diſcharge ſtill increaſed; however, I laid open one more Sinus.

The Ulcer now reach'd from the Origin of the Soleus, juſt below the Knee, all along the Inſide of the Tibia, as far as the Heel, being in ſome Places very broad, and in others very deep; all the Bones of the Toes and Metatarſus were gone, and all thoſe of the Tarſus carious. I now ſuſpected that the Tibia was carious further than we perceived it, which might be the Cauſe of that great and conſtant Diſcharge; and I thought that he could not bear ſo large a Drain long, and that it was better to have his Limb off, before it was too late: But, on the 27th, I was much pleaſed, to find the Diſcharge conſiderably leſſened, and could diſcover no more Sinuſes: We, therefore, agreed to proceed as before, only to dreſs twice a Day, for ſome time.

On the 28th I found the Ulcer in good Order, and the Diſcharge leſſened.

July 1. we ordered an Infuſion of the Bark to be taken twice or thrice a Day. On the 8th he was carried out into his Garden, for the firſt time, in his three-wheel'd Coach, for the Benefit of the Air. On the 12th I took off the *Os Cuboides*, and the three ſmall Bones of the Tarſus. On the 16th I ſeparated the *Os Naviculare*, and left only the *Aſtragalus* and *Os Calcis*.

Auguſt 5. I cut off, with a Kniſe, that large Fungus which ſprung from the *Os Calcis*, and had plagued him ſo long, and then applied the Actual Cautery to ſtop the Blood, and conſume the Roots of the Fungus. Before this, I had tried red Precipitate, *Roman* Vitriol, Butter of Antimony, and even the Potential Cautery, ſeveral times, one after another, but could not deſtroy it.

On the 29th, Part of the *Os Calcis* came away.

Sept. 4. I took away the *Aſtragalus* whole, and the Remainder of the *Os Calcis*, as I thought: When theſe two Bones came out, they left a Hollow big enough to receive a Duck's Egg; the back Part was form'd by a horny ſort of Excreſcence, which ſeemed to ſpring from the *Tendo Achillis*, the fore Part of it, by the Remainder of the Fleſh which made the Back of the Foot, and the upper Part by the hollow End of the Tibia: A good deal of Blood follow'd theſe Bones, therefore I cramm'd this Hollow full of Lint, and roll'd it up tight.

On the 6th, I cut off this large horny Excreſcence (which made a Half-Moon round the End of the Tibia) with a Kniſe; there was no Appearance of any Bone in it, yet my Kniſe ſtopp'd, when about half way through, which ſurpriſed me a little, becauſe I concluded the *Os Calcis* was entirely gone, yet there was a pretty large Piece of it in the middle of the Fungus. I, therefore, cut a little higher towards the *Tendo Achillis*, and it ſeparated, with Eaſe, all round. It bled very freſh, ſo I ty'd one Veſſel, which ſpurted out, and ſtopp'd the reſt with the Actual Cautery, which, at the ſame time, conſumed the Roots of the Excreſcence. It was very remarkable, that the End of the Tibia was not carious, notwithſtanding theſe foul Bones had remained there ſo long.

On the 13th I found all the Sloughs ſeparated, the End of the Tibia covered with a fine grainy Fleſh, the Lips thin, and the Diſcharge moderate and laudable.

By *Nov.* 8. the long Ulcer, which reached from his Knee to his Heel, was perfectly cicatrized; and though all the Bones of his Foot were taken, yet the Ulcer, on the End of the Tibia, was not above the Breadth of a Shilling, and, otherwiſe, very

favourable. I then ordered a wooden Leg to be made for him, to clap his Knee on, and walk about for Exercise, until this little Ulcer should be cicatrized.

Mr. *Samuel Lewis*, aged Seventy-six Years, of a pale Complexion, and choleric Constitution, a lusty, and, seemingly, a very healthy Man, having but little Sickness from his Youth, shewed me an Inflammation of his Left Leg, extending from an Issue he had below his Knee, down to his Ancle, and all round his Leg, partaking of an Erysipelas and Oedema. I threw out the Pea from his Issue, and endeavoured, by discutient Fomentations, Embrocations, and Cataplasms, with Bleeding, and lenient Purges, to mitigate the Inflammation, but to no Purpose; for I found it tending, very fast, to a Gangrene: His Leg, from an intense red, turned livid black; Blisters arose, *&c.* I would have scarified it, but was not permitted.

On the thirteenth Day the Tumor was sunk, his Leg black and dry, his Pulse quick, with frequent Intermissions; his Countenance wild, his Tongue hard, parched, and dry: He would not permit the necessary Incisions to be made. With the Consent of Dr. *Anthony Weaver*, a Gentleman of great Charity, Humanity, and Learning, I prepared eight of the following Draughts:

Take of the Powder of the best *Peruvian* Bark, half a Dram; of the Water of Black Cherries, one Ounce and a half; and of the Syrup of Saffron, half an Ounce: Mix, for a Draught.

One of these Draughts I gave him about Noon, and order'd, that he should continue to take one every four Hours.

On the fourteenth Day, about Ten in the Morning, by which time he had taken three Drams of the Bark, I found his Tongue moist, his Countenance not so wild; and, examining his Leg, found it impostumated, from a little below the superior Tubercle of the Tibia, down to the Small of his Leg; a little above which I saw a small Aperture, with a little Matter ousing from it. I told him, he stood a very fair Chance for his Life, if he would submit to the suitable Means. With his Allowance, I immediately entered the Probe-point of my Scissars at the Aperture, and cut upwards, as far as it was hollow; then turned them, and cut downwards, as far as the Cavity ran, and discharged between three and four Ounces of a well-digested Pus; and, after fomenting very well with a Decoction of the warm Plants in a strong Lixivium of Wood-ashes, Sal Ammoniac, and camphorated Spirits of Wine (which I had used from the Time I suspected it would mortify), I dressed the Incision with equal Parts of Basilicon and *Linimentum Arcæi*, spread upon a Dossil dipped in hot Oil of Turpentine, with a Cataplasm of Oatmeal, Flowers of Centaury, and Chamomile, of each equal Parts, with the Fomentation and Oil of Chamomile over all. He found an agreeable Warmth about his Leg, after the Dressings were applied.

On the fifteenth, I found him very chearful, and discovered a large Sinus betwixt the Soleus and *Gastrocnemius internus*; I laid it open, and discharged about the same Quantity of well-digested Matter as Yesterday: There was a very large Slough in the former Incision, which I cut off, and dressed as before.

The sixteenth he had been very restless all Night, his Pulse irregular, his Tongue rough and dry, with Flushings in his Cheeks. Inquiring if he had taken his Draughts regularly, I was told he had not, through the Attendant's Drowsiness: After reprimanding them for that Neglect, and cautioning him about it for the future, I opened his Leg, and found the Discharge large, a fungous Flesh rising in the first Incision, which I sprinkled with red Precipitate, and dressed as before; and, by reason he had not a Stool since the fourteenth, I ordered him a common Clyster, which brought away some harden'd Excrements: At Night, his Heat and Flushings were not so great, and his Tongue was moister.

The eighteenth, being wearied of his Draughts, I ordered thus:

Take of the Powder of the best *Peruvian* Bark, half an Ounce; and of the Confection of Alkermes, one Ounce: Mix together, and divide into eight Boluses; one of which is to be taken every fourth Hour, drinking after it three Spoonfuls of the following Julap:

Take of Milk-water, and Black Cherry-water, each four Ounces; of Rue-water, half an Ounce; of the epidemical Water, two Ounces; of the Tincture of Saffron, prepared with the Aqua Theriacalis, one Ounce; of the Confection of Alkermes, two Ounces; and of the Syrup of Cloves, two Ounces: Mix all together.

I observed Matter lodged in the *Gastrocnemius internus*, almost to the Back of the Leg; I opened it in the most depending Part, but had not the Discharge I expected.

On the twenty-first Day, Compresses and Bandages were applied, to unite that Cavity, and prevent the Matter from lodging in it.

On the twenty-second, a Sinus, running towards the Small of his Leg, opened.

On the twenty-third, he complained of a Pain in his Side, and had a restless Night: I dressed the Ulcers only with dry Lint; the Cavity above-mentioned inclined to unite.

On the twenty-fourth he was very much dejected, but I could not apprehend the Reason of it; every thing appeared in good Order.

On the twenty-fifth he shew'd me a Swelling in his Groin, with great Hardness and Inflammation reaching down the Inside of his Left Thigh, extending to a pretty large and insensible Tumor a little above his Knee, which he found gradually to increase since the fifteenth Instant, but did not speak of it before, lest he should (as he expressed it) be cut there. I applied an emollient Plaister over it, and was apprehensive he would have a very large Abscess, which would exhaust him: There was very little Discharge from his Leg.

Till the thirtieth Day his Fever increased, with an irregular Pulse, great Drought, and a Dryness of the Tongue, notwithstanding he continued the Use of the Draught or Bolus, as before; very little Discharge from his Leg, the Ulcer appearing livid. I fomented well, and applied the warm Digestive, as above. The Swelling in his Groin very much increased; the Inflammation decreasing, I felt Matter to fluctuate, but deep; the Tumor not very painful. Not having a Stool for several Days past, I gave him a lenient Purge, by which he had a very large Stool of black and very fetid Excrements.

On the thirty-first, the hard insensible Tumor above his Knee was of a livid Colour, and that in his Groin rising towards a Point near the Inguen, inclining to the Inside.

On the first and second of *February*, instead of Matter, there was a Discharge of clotted Blood from his Leg: I dressed with the warm Digestive.

On the third, the Pus was laudable, the Tumor in his Groin considerably raised; he took a lenient Purge, which gave him one Stool, not having had one since the thirtieth of last Month.

The eleventh; to this Day his Fever continued, but not in any Degree, and his Pulse was irregular; a white Pustule appeared on the most prominent Part of the large Tumor in the Inguen, which I cut, and then entering the Point of my Probe-scissars, cut about an Inch in Length near his Groin: Well-digested Matter gushed out, as from a Cock, and in as full a Stream, sometimes streak'd with Blood: I took from thence, at least, three Pounds. His Leg begins to cicatrize.

On the twelfth, a large Discharge about the Bed, from the last Incision, and a large Quantity of Matter that fell below the Orifice, yet in the Cavity on the Inside of the Thigh. I applied a Caustic on the lowest Part, and discharged from thence about half a Pound; I, also, open'd that Tumor near his Knee, and discharged an Ounce of well-digested Pus.

On the nineteenth I opened another Sinus on the Inside of his Leg, and discharged thence only several Clots of Blood. From this time the Discharge from his Thigh gradually lessen'd; that very large Sinus united, by means of Compress and Bandage; his Fever left him; and he did not use his Medicine since the Fourteenth Instant; in which Time, in Draughts and Boluses, he had taken between ten and twelve Ounces of the Bark, which, being continued so long, and regularly, I believe assisted Nature to expel her Enemy in that very large Abscess in his Thigh, which, otherwise, might, notwithstanding the Mortification was stopp'd in his Leg, have seiz'd it again, or have fallen upon some more noble Part, and occasioned his Death; after which, I made him a Decoction of the most agreeable Bitters, by which means, he recover'd a good Appetite, and, in a short time, was able, with a little Assistance, to walk down Stairs, and any-where else in the House, with a Staff only; and, on the twenty-fifth of *March*, he walked to my House to be dressed, which is near a Quarter of a Mile; and, about a Week afterwards, went to his Work as usual, (which is mending Shoes) his Leg giving him very little Disturbance. In the Day it swells considerably; but, when he rises, in the Morning, is of its natural Size; for which I order'd a laced Stocking. His Thigh is strong, and firmly cicatrized; as, also, is his Leg; and the Man enjoys good Health, and is every Way as fit for his Work as he was before his Illness.

A Surgeon of *Glasgow*, of a very bad scorbutic Habit of Body, about forty Years of Age, had a little Pimple on the middle of the Under-lip, which his Barber cut the Top from, in shaving him, on *Saturday* the ninth of *February*; the following Evening, upon going out to the cold Air, the Pimple swelled, and turned hard, with an Inflammation all round it, which increased the *Monday* following: He applied an antiphlogistic Fomentation, with Spirit of Wine camphorated. Notwithstanding the frequent Use of these for four or five Days following,

following, and his being twice blooded, the Inflammation, Hardneſs, and Swelling, increaſed conſiderably, extending itſelf to the Angles of his Mouth, and ſome way along the Cheeks, and all round the Chin, with great Pain, and with vaſt Diſorder through his whole Body.

On *Friday* the fifteenth, at Eleven at Night, a ſmall black Spot, about the Bigneſs of a Herring-ſcale, appeared (not where the Wound was, but) on the middle of the red Part of the Lip, which ſpread ſo faſt, that, by Eleven next Forenoon, it cover'd near one half of his Lip, that then began to ſtand out much; when a Conſultation, of almoſt all the Phyſicians and Surgeons in Town, was called, who adviſed the Continuation of the Fomentation and Spirits, as before, and a Decoction of the Woods. For two or three Hours the Mortification continued to ſpread, till it had covered almoſt his whole Lip, reaching inwards, and downwards, to the Gums, the Hardneſs and Swelling of the neighbouring Parts increaſing. Upon this, he was adviſed to try the Powder of the *Cortex Peruvianus*, half a Dram for a Doſe. He took the firſt Doſe betwixt Three and Four o'Clock Afternoon, and his Lip was dreſſed at Ten at Night, when the Mortification did not appear to be increaſing, at leaſt the Increaſe was very inconſiderable: He then took another Doſe of the Bark. Towards the Morning of the ſeventeenth his Lip was again fomented, and he took a third Doſe of the Bark: At Ten of the Forenoon I dreſſed it, and found the Mortification had made no further Progreſs ſince laſt Night: At Night I dreſſed it again; and then, for the firſt time, obſerved ſomething like an Appearance of Suppuration at the Place where the Wound, or, rather, Pimple, was; but none at all on the mortified Part. That Night he took another Doſe of the Bark, and continued to take two Doſes, one in the Morning, and another in the Evening, for two Weeks.

The Fomentation and Spirits being applied twice a Day, and a little Emulſion given him for Drink, without any other Medicine than the Bark, the Suppuration ſucceeded well in the mortified Parts on the third Day after he began to take that Medicine; upon which, proper Digeſtives, and other Dreſſings, were applied. The Sloughs caſt off very well; the Hardneſs and Swelling went off; and, in twelve or fifteen Days, the Lip healed up, though with a conſiderable Contraction, by the great Loſs of Subſtance.

In very cold Air he ſtill feels a Pain in his Lip. This, I am apt to believe, does not ſo much proceed from the Callus, as from his Lip preſſing upon the fore Teeth, which are very rough and looſe; and which it does, more eſpecially, when he attempts to ſpeak, by the Lip being ſo much contracted.

I have read this Account to the Patient, and had his Approbation of my Relation of the Facts, which my Attendance on him all the Time of this Diſorder gave me ſufficient Opportunity to obſerve.

Mr. *Monro*, Profeſſor of Anatomy in the Univerſity of *Edinburgh*, gives the following Remarks upon the *Peruvian* Bark.

After the good Effects of the Bark, in Gangrenes, were known, I had Occaſion to uſe it ſeveral Times, in that Diſeaſe, with Succeſs; and ſometimes, by Neceſſity or Choice, gave it in an Injection by the Anus, rather than by the Mouth, as I had, alſo, formerly done in Agues: The Quantities given in Clyſters were larger, but the Effects were the ſame. One Cure of a Gangrene, made, I think, by the Bark in Clyſters, ſeems to me ſo remarkable, that I muſt tell the Hiſtory of it.

A young Gentleman, very healthy, in Appearance, had ſtrained his Left Hand, but had no Uneaſineſs in it for ten or twelve Days; at the End of which, he was ſuddenly ſeized with a very ſharp Pain near the *Os Piſiforme* of the Wriſt; and, ſoon after, the Teguments on the anterior Part of the metacarpal Bone of the little Finger ſwell'd: He neglected to aſk Advice for two Days; then ſome Student, who ſaw it, obſerving a Mortification begun, ſcarified the Skin, fomented the Part, and applied ſome digeſting Ointment with Oil of Turpentine; which Dreſſings were continued, alſo, the third Day.

On the fourth Day, when I ſaw him firſt, the Teguments covering the ſhort Muſcles of the little Finger were all mortified, his Pulſe was ſo low, that, with Difficulty, I could feel it, and it was ſo quick, that I could not number the Beats of it. He had a general Tremor over all his Body; the *Subſultus Tendinum* was very frequent; he had a conſtant Anxiety, Reſtleſſneſs, and Delirium; his Tongue was parched and dry; and whatever Food or Drink he ſwallowed, was vomited before it almoſt got down to his Stomach. The gangrened Parts were again ſcarified and fomented, their Edges were dreſſed with warm Baſilicon, to which a ſmall Proportion of Oil of Turpentine was added, and a Poultice of *Venice* Treacle was put over all. Soon after, his great Guts were emptied by a laxative Clyſter, and, as ſoon as the Operation of this was done, five Ounces of warm Milk, and a Dram of the Powder of the *Peruvian* Bark, were injected, which he retained: Four Hours after, the Milk and Bark were repeated; and two more ſuch Injections were given, in the Night-time.

Next Morning he had no Raving, Tremor, Subſultus, or Vomiting; and his Pulſe was ſtronger and ſlower: The Hand was dreſſed, as the preceding Day, and the Injection with the Bark was repeated; in the Afternoon it was changed, at the Patient's Deſire, for a Bolus of half a Dram of the Bark, which was repeated every four or five Hours. The Fever ceaſed, the gangrened Parts began to ſeparate next Day, and, the Bark being continued ſeveral Days, the Cure went on without any further Accident, except that he was put to a good deal of Pain, one Day, by an Application of ill-prepared *Aqua Phagedænica*. This I mention, to have an Opportunity of warning the younger Surgeons not to make Uſe of that Medicine, unleſs when the Lime-water is ſtrong enough to make the Solution of the corroſive Sublimate Mercury to turn turbid, and to precipitate in Form of a very fine red Powder: For if the Lime-water is effete, and remains clear after the Sublimate is mixed with it, inſtead of a very mild Medicine, they are to expect all the Effects of unaltered corroſive Mercury.

In all the Gangrenes where the Bark was given with Succeſs, I obſerved, that it brought on a mild Suppuration, which I ſaw became worſe when the Uſe of the Bark was interrupted, and then turned of a good Kind, when the Bark was again given: This made me join in Opinion with others, that it would, alſo, be of good Service in ſeveral Sores where the Suppuration was faulty: Experience proved we judged right; ſo that the Bark became a common, and a beneficial Medicine, in this Town, for ſuch Sores.

This Effect of the Bark, in procuring a kindly mild Suppuration, led me to imagine, it might be ſerviceable in the Small-Pox of a bad Kind, where either a right Suppuration did not come into the Puſtules, or the Petechiæ ſhewed a Diſpoſition to a Gangrene; and I had the Pleaſure to ſee the Effects I expected from it in ſeveral variolous Patients, to whom I gave the Bark: The empty Veſicles filled with Matter, watery Sanies changed into thick white Pus; Petechiæ became gradually more pale-coloured, and, at laſt, diſappeared; the blackening of the Pox began ſooner than was expected. I no ſooner had the good Effects of the Bark in the Small Pox aſcertained by Trials, than I ſpoke of it to other Gentlemen in Practice here, ſome of whom had reaſoned in the ſame way I had done, and had been giving it to their Patients with Succeſs; ſince which, I have had Thanks from ſome of my Friends in the Country, to whom I recommended this Practice.

I gave, at firſt, the Decoction, and then the Extract of the Bark; afterwards, I forſook thoſe weaker Preparations for the fine Powder, which was mixed with ſome mild rich Syrup, and an aromatic diſtil'd Water, both which may be varied, as the Patient prefers one ſort of Taſte to another. In this Form, from ten to forty Grains were ordered to be ſwallowed every four or five Hours.

But as ſeveral Children could not be prevailed on to take it by the Mouth, in any Form I could contrive, and, through fear of having this Medicine given, would taſte neither Food nor Drink, there was a Neceſſity of uſing the other Form of Clyſters: Previous to giving the Bark this way, the great Guts were unloaded by a laxative Injection; and then from half a Dram to two Drams of the Jeſuit's Powder was injected, with a ſmall Quantity of warm Milk, to which ſome Diaſcordium, or Syrup of Poppies, was added, if the Clyſters were retained too ſhort a time: Theſe Injections were repeated Morning and Evening, or oftener.

I have hitherto only given the Bark in the Small Pox, after the Eruption, and continued it till the Blackening was completed; but am perſuaded, from the Effects I ſaw of it, in mitigating the Secondary Fever, that if it is given during the eruptive Fever, it might be of Uſe in determining the Small Pox to be of a favourable Kind.

I hope what I have ſaid will not be underſtood as if I recommended the Bark as an infallible univerſal Remedy in thoſe Diſeaſes, and the only one that needs to be employed in them: So far from meaning any ſuch thing, I aſſure you, I have ſeen it fail, more than once, in both Gangrenes and Small Pox; and, in general, I know no Medicine which is not capable of doing Hurt to Patients, under ſome particular Circumſtances of the very Diſeaſe for which it is given with the moſt Succeſs. Thus, in the Small Pox, when the Lungs are violently infarcted, I would not conſent to give the Bark: I have ſeen Patients, in this Condition, almoſt ſuffocated, after a ſmall Doſe of it: They would, alſo, in my Opinion, do very ill, who would truſt entirely to the Bark, neglecting the other Medicines which have been uſed, to Advantage, in the different Circumſtances of this Diſeaſe. The Bark would not, ſurely, moderate a very high, full, hard Pulſe, with high Breathing, and inflamed Brain, in either eruptive or ſecondary Fever of the Small Pox, as Blood-letting would do. The Bark could not

clean the Stomach and Bronchia of viſcid Phlegm, as an Emetic would; it would not, ſingly, calm the general Spaſm, or relax the Skin, to make way for the Eruption, as when aſſiſted by a tepid Bath: Nor would it raiſe a ſinking Pulſe, or diſcharge a Load of viſcid Humours, as the Stimulus of a Bliſter, and the Suppuration after it, will frequently do. In ſhort, I pretend to recommend it no further than as an excellent Aſſiſtant to Nature in what the Antients called the Concoction and Maturation of the morbid Matter, the Effects of which appear in moderating the Fever, and bringing a kindly mild Suppuration; which are, indeed, grand Articles, in the Cure of Gangrenes, Ulcers, and Small Pox. *Medical Eſſays.*

Mr. *Ranby*, in a late Treatiſe, recommends the *Peruvian* Bark, in ſome Caſes where its Uſe is not, I believe, commonly known, as follows:

The Method I have preſcrib'd to myſelf, in penning this ſmall Treatiſe, leads me in this Place to ſpeak of the Bark; a Medicine which no human Eloquence can deck with Panegyric proportionable to its Virtues; of ſuch incomparable Benefit it is to Mankind!

I have for a long time indulged myſelf in the frequent Uſe of this noble Drug, in reſpect of large Sores of every Kind; and have often experienced, that, in thoſe painful Circumſtances, it would procure Reſt, if given in large Doſes, when even Opium had been taken, without any manner of Effect.

Though I am aware, that a very ingenious Surgeon recommends the Bark (ſee *Philoſ. Tranſ.* N° 426.) againſt Hæmorrhages, in external Wounds in general; yet the preſcribing it in gun-ſhot Wounds, in the manner I introduced it laſt Campaign, is a Practice, as I conceive, no-where left us on Record; and this I did with extraordinary Succeſs, of which I ſhall give ſome few of the many Examples that have occurred to me in Practice.

In all large Wounds, eſpecially thoſe made by a Cannon-ball, there is conſtantly a great Laceration of the Membranes, and Parts endued with an exquiſite Senſation; and theſe are ever attended with an excruciating Pain, and a Diſcharge of a gleety Matter, which, if not reſtrain'd, proves often of the laſt Conſequence. In this unhappy State, the Bark (given in Doſes of a Drachm each, and repeated every three Hours, or oftener, if the Stomach will bear it) with ſurpriſing Efficacy repairs the Breach made in the Conſtitution by this terrible Havock. Elixir of Vitriol, taken three times a Day, in a Glaſs of Water, I find to be of ſingular Benefit, and to prove a very good Aſſiſtant to the Virtues of the Bark; and, if the Body be coſtive, to each Doſe of the Bark I add four or five Grains of Rhubarb, till that Inconveniency is remedied. Should the Bark run off by more than four or five ſucceſſive Stools, I take care to check this Effect of it, by ordering two or three Drops of Laudanum, or two Spoonfuls of a Diaſcordium Mixture, along with it, every time it is given.

Where the Sore diſcharges a conſiderable Quantity of gleety Matter, is flabby, looks pale, and gloſſy, (which Appearances are ever conſequent to a Loſs of Subſtance) the Bark continually relieves the Pain, that is predominant in this Caſe, thickens the Matter, leſſens its Quantity, and quite changes the Complexion of the Wound. And though the Patient has a dry Tongue, great Heat, a quick, low Pulſe, and a Head hardly clear; yet, even in this Situation, I have known it to do Miracles. Nor (I freely own, when the Neceſſity for it is evident from Symptoms) have I, in adminiſtring it, the leaſt Attention to the Quickneſs of the Pulſe; and in Wounds where, upon every Dreſſing, the Arteries have ſtarted, and, of courſe, ſubjected the Patient to no little Hazard, I have frequently remark'd the Bark to procure the moſt unaccountably good Effects.

However, I would not be underſtood to inſinuate, that the Bark will ſtop the Bleeding of any conſiderable Artery; nevertheleſs, though this efficacious Property is not to be expected from it, the vitiated Texture and State of the Blood (which, from too great a Degree of Fluidity, forces thus its Way thro' the arterial Paſſages) will be alter'd more effectually from the Exhibition of it, than from any thing I know in the whole *Materia Medica:* From whence, I think, is plainly pointed out to us, the Baſis we are to erect our future Superſtructure upon. The Bark, on theſe Occaſions, I conſtantly adviſe, together with Opiates, more or leſs, in proportion to the Urgency of the ſupervening Symptoms.

As to the Efficacy of the Bark in amputated Limbs, Mr. *Ranby* gives the following Caſe: It is very common, in ſcorbutic Conſtitutions, for a Sore, the firſt eight or ten Days after taking off the Limb, to promiſe all imaginable Succeſs; from which time it frequently begins to gleet prodigiouſly, looks pale, gloſſy, and flabby; and this Gleeting, if not check'd, in a little while runs the Patient out of the World. In Exigencies of this Kind, the Bark hardly ever fails to procure Relief, and works an apparent Change in a very ſhort Space of Time, ſometimes in twelve Hours. This I can atteſt for abſolute Truth, in regard of a very worthy Gentleman, about fifty Miles from *London*, who broke his Leg by a Fall from his Horſe. I took it off the ſecond Day from the Accident, and, after the firſt Dreſſing, reſigned him to the Care of his neighbouring Surgeons, not, in the leaſt, afterwards ſuſpecting but that every thing was ſucceeding agreeably to our Wiſhes: But the Scene was ſoon reverſed; for, about ſixteen Days after, I receiv'd a Letter from the Gentleman who had the Management of him, intimating, that a ſmall Artery, near the Skin, bled very freely, on their removing the Dreſſings. In Anſwer, I adviſed a Vein to be open'd in the Arm, and the Bark to be taken inſtantly. But, as the Symptom of the arterial Opening ceas'd, and the Patient was without any Sign of a Fever, the Advice of ſeeking Reſource from the Bark was poſtpon'd. The Seven-and-twentieth Day, another Surgeon, eminent in the Profeſſion, and myſelf, were hurried out of Town to his Aſſiſtance: On our Arrival, we found him very much emaciated, a great Gleet inceſſantly ouſing from the Stump, which, on the Removal of the Dreſſings, bled, from every Pore, like Water preſs'd from a Sponge. We immediately gave him the Bark, and repeated it every two Hours. The next Morning, the Diſcharge was conſiderably leſſen'd, nor did there appear the leaſt Footſteps of Bleeding. If he accidentally, at any time, neglected taking it only for a Day, or even leſſen'd the Doſes, the Wound inevitably pointed out the Omiſſion, by the Alteration of its Complexion. He perſiſted in the Method of taking the Bark every two or three Hours, till he came to Town, when it was thought proper to give him a larger Reſpite. He now enjoys a perfect State of Health, and has done ſo ever ſince the Stump was heal'd; but, ere this was accompliſh'd, he took near nine Pounds of the Bark. *Ranby.*

This Bark is brought from *Peru*, and there are three Kinds of it. The firſt is of a bitter, reſinous Taſte, and not ſo red as the common ſort; the ſecond, leſs than the firſt, is cover'd with a Moſs; the third is the fineſt, and imported in ſmall Pieces.

The *Peruvian* Bark is uneven, and thick, its Colour reſembling that of Cinnamon, Coffee, or Ruſt of Iron. It is of a bitter Taſte, and has no Smell but what comes from the Wood. The Name *Kina* is taken from the Count of *Cinchon*, who was Viceroy of *Peru* when the Medicine was diſcover'd. The Tree, to which it belongs, is not, as yet, ſufficiently known: It is ſaid to have Leaves like the Plum-tree, and flowers like the Orange-tree. *Herman* ſays, it is a high large Tree, like the Lime-tree; and that it bears Berries. It grows in the inland Part of *Peru*, on the Mountains near *Loxa*, or *Loja*, in the Province of *Quito*. The *Spaniards* ſay, that the Uſe of its Bark was diſcover'd in the following Manner:

Near the Town of *Loxa* was a Lake ſurrounded by *Quinquina* Trees, before the *Spaniards* ſettled in that Country: Theſe Trees being, by an Earthquake, or ſome other Accident, thrown into the Lake, communicated a bitter Taſte to the Water; ſo that the Inhabitants, who uſed to drink it, were obliged to leave it off: However, an *Indian*, who had a violent Fever upon him, and, conſequently, a great Drought, finding no other Water, was forced to drink of this, by which he was perfectly cur'd of his Fever. He related this Adventure to ſome of his Friends, who, having made the ſame Experiment, were likewiſe cur'd: Upon this, they ſet themſelves to diſcover what had given this febrifugous Quality to the Water of the Lake, and found, in the firſt Place, that a great Number of Trees had fallen into it; and, Secondly, that, after a certain time, theſe Trees, being rotted in the Water, it loſt its bitter Taſte, and, at the ſame time, its Virtue: Whence they concluded, that this Virtue was owing to the Trees. Afterwards, they tried all the Parts of them infus'd in Water; and thus diſcover'd, that their whole Virtue reſided in the Bark. The *Spaniards* having conquer'd their Country, this invaluable Medicine was kept a great Secret; and they oblig'd themſelves, by Oath, never to diſcover it to their Conquerors; hoping, thereby, to ſee them all periſh by the epidemical Fevers that then reign'd in the Country. The Secret was inviolably kept, till the Year 1640, when a *Spaniſh* Soldier, quarter'd in an *Indian*'s Houſe, who had got into the good Graces of his Landlord, was ſeiz'd with a ſevere Ague. The *Indian*, touch'd with Compaſſion, and fearing, perhaps, that he ſhould have a worſe Gueſt, if this Soldier happen'd to die, brought him the Bark, which having taken, he was ſoon perfectly cur'd. The Soldier, ſurpris'd at ſuch an unexpected good Effect of an unknown Remedy, made uſe of all his Addreſs to diſcover the Tree to which this Bark belong'd, and, at length, ſucceeded. For ſome time he contented himſelf with curing his Fellow-ſoldiers, but never told them by what means; but the Vice-queen, Wife of the Count *de Cinchon*, then Viceroy of *Peru*, being

being seiz'd with an intermitting Fever, which had so far baffled the Skill of her Physicians, that her Life was despair'd of, and this Report having reach'd as far as *Loxa*; the Soldier, who was Master of the Secret, told his commanding Officer, that if he would allow him to go to *Lima*, he would cure the Vice-queen. The Officer, having inform'd himself of the Cures he had perform'd in that Country, readily gave him not only Leave to go, but, also, Letters of Recommendation, and proper Certificates. Being arriv'd at *Lima*, he was admitted to make Trial of his Medicine, on this Condition, that he was to take as much himself as he gave to his Patient. This he easily agreed to; and, having succeeded, in a very little time he was amply rewarded, and then prevail'd on to discover the Secret, which the *Spaniards* made use of from that time forward, with so great Success, that the Physicians were astonish'd, and half-starv'd. In 1649. Father *de Lugo*, a Jesuit, then Procurator General of his Order, and afterwards a Cardinal, brought some of this Bark to *Rome*, and the Society began to bring it into Reputation in *Europe*, by which they got a great deal of Money, in a short time. They sold it for more than the Weight in Gold, and, to disguise it the better, never parted with it but in Powder. From that time it was call'd the *Jesuits Powder*, because these Fathers were the sole Masters of it, and had brought it into Use. Two Drams were at that time thought sufficient for the Cure of any intermitting Fever, because they never gave it till after many other Medicines had been made Trial of. The Physicians were divided in their Opinions about it, some looking on it as a divine Medicine, whilst others believ'd it dangerous, and even fatal, in many Cases. Many Treatises were written, some for it, others against it; but the *English* Physicians, having, at length, made several Experiments with it, that might be depended on, it came to be greatly in Vogue in *England*; and the famous *Morton* wrote his *Pyretologia* in its Defence. In 1679. a Person, nam'd *Tabor*, who, to make himself more considerable, changed his Name to *Talbot*, came into *France*; where, having cur'd the Dauphin of a stubborn quartan Ague, by this Medicine, it gain'd a great Reputation, and the King purchas'd his Secret, and made it public. It was then term'd the *English Remedy*, and consisted of an Infusion of the Bark in Wine. There was a little Treatise publish'd at that time, with this Title, *The English Remedy for Fevers*.

The Bark is an infallible Remedy for all intermitting Fevers, if the following Circumstances be observ'd:

1. The Patient ought to lose some Blood, and to be purg'd before he takes the Bark; and, if he is of a dry Habit of Body, he ought to be kept, for some time, to a liquid Diet; because, before the depuratory Fermentation is begun, the Fluids ought to be well diluted.

2. The Bark made use of ought to be compact, or solid, of a reddish Colour, like Cinnamon, of a faint Smell, a little musty, bitter and astringent to the Taste, and not kept too long.

3. It ought to be given in large Doses: For Instance, a Dram of powder'd Bark may be taken at a Time, in a Glass of White-wine, or Water, and repeated every three Hours, till the Time of the Return, or Paroxysm, be over. It may, likewise, be given in Infusion, or Decoction; an Ounce boil'd in a Quart of Water, till reduced to a Pint, being drank, by large Draughts, in the Interval between two Fits.

4. It ought to be continued for a long time after the Fever has ceas'd, gradually diminishing the Dose, and the Frequency of repeating it. This is a sure way to prevent a Return.

This Remedy appears sometimes to fail, that is, the Fever returns, after a certain Quantity of it has been taken; but this is never owing to want of Efficacy in the Bark, but from Ignorance of the true Method of taking it. Thus, if the Body is not sufficiently prepar'd, it can't act as it ought, because of the Obstructions it meets with in the *Primæ Viæ*, and in the Blood-vessels. If the Bark be bad, nothing is to be expected from it; and if the Dose be too small, or not continu'd for a sufficient time, it only deadens the Fever for a time, but does not radically destroy it. It is, therefore, a groundless Prejudice, that the Bark fixes Agues, or that the Use of it is ever attended with bad Consequences, especially in the Stomach, as many pretend. The Patient is seldom thoroughly cur'd without some kind of Crisis, especially by Stool, or Urine: This latter is the best, and the Physician may be assur'd, that his Patient is safe, if he makes a greater Quantity of Urine than usual. The Bark has, likewise, been given in Clysters, with Success; but then the Quantity, usually taken by the Mouth, ought to be tripled.

This admirable Specific is, likewise, a good Alterative, and, consequently, proper in an infinite Number of Cases where there is no Fever; for it strengthens the Stomach, excites the Appetite, &c.

This Medicine is not hurtful to weak Lungs, as some imagine, Experience having often shewn the contrary; and it has often prov'd very successful in Catarrhs, and other Kinds of Fluxions, even when accompanied with Spitting of Blood, as in the Case of the late Mareschal *Tallard*. But in these Cases other pectoral Medicines are to be join'd with the Bark.

Some join with the Bark, given in Fevers, dried Arum-root, Sal Ammoniac, Cinnamon, &c. Sal Ammoniac is the most proper Way of any, being mix'd in the Quantity of half a Dram to two Drams of Bark. *Geoffroy.*

QUINTA ESSENTIA. See ESSENTIA.

CHYMICAL LIQUID QUINTESSENCES.

Put any distil'd aromatic, or essential Oil, into a clean dry Glass, and pour to it twelve times its Quantity of pure Alcohol, distil'd from Alcali, so as to contain not the least Water: Shake them together, and the Oil will disappear, and intimately mix with the Alcohol, so as to form one simple and transparent Liquor; but no Water must be contained, otherwise the Experiment will fail.

Alcohol, therefore, and essential Oil, are of such a Nature, as intimately to mix and unite together, provided they are both perfectly freed from Water; for, if only the Glass were moist, or the Breath interposed, it would hinder the Effect: And, when the Solution is perfect, and the two Liquors are thoroughly mixed together, the Addition of Water turns them white, or opake, while the Water unites with the Alcohol, and separates the Oil.

If the Alcohol, saturated with the Oil, be carefully distilled, in a close Vessel, with a gentle Fire, and several times cohobated, the Oil will thus gradually be made so volatile, as, in great measure, to rise along with the Alcohol: Whence Oils are rendered more moveable, and more subtile, and are exalted to the highest Degree of Penetrability, like that of Spirit, tho' still retaining their native Virtues. But if, with a Fire of only Ninety Degrees, a Mixture of Alcohol and these Oils be distil'd, the Alcohol will rise by itself, or only carry with it the presiding Spirit from the Oil, leaving the oily Part behind; and if, with great Care and Caution, the thinner Part be several times separated from the thicker, by repeated gentle Cohobations, the Alcohol will, at length, be so impregnated with these Spirits, as to appear almost pure Spirit itself, leaving a gross exhausted Oil behind.

REMARKS.

The antient Chymists conceived, that Fire, Air, Water, and Earth, contributed to the Composition of Bodies, with the Addition of a fifth thing, which, made of the four common Elements, enriched the Whole, by its own particular and inseparable Virtue, whereon the Colour, Odour, Taste, and Virtue, of each Body, principally depends: Therefore, they supposed, that each particular thing, consisting of four Essences, had a fifth Essence added to it, which was extremely small in Quantity, yet of very powerful Efficacy, so that, when separated, and added to another Substance, it animated the Spirits thereof: Upon which Subject *Isaac Hollandus*, and *Paracelsus*, ought to be read. There is scarce any known Method more proper than the present, for preparing Quintessences. Thus, if a single Drop of Quintessence, so made, with Oil of Cinnamon, be mixed, and drank with a Glass of *Spanish* Wine, it instantly gives a grateful Briskness to the flagging Spirits, and therefore proves an admirable Remedy in Faintings, Suffocation, and want of Spirits. Nor do we know, that the Art of Chymistry can go farther, in obtaining the Virtues of Vegetables. If a Drop of such a Mixture, of Alcohol and Oil, be let fall into the Water, it presently turns milky; which shews when Oils are adulterated with Alcohol. Hence, also, we understand the Power of Alcohol, which principally acts upon the Spirits and Oils of Plants, by mixing and fixing them intimately with itself, and thus making a Compound, which afterwards seems to act with an uniform Virtue. And though these Oils exist under very different Forms in Vegetables, yet they may still be united with Alcohol, provided there be no Water in either: And we find, that the native Spirit always adheres to this oily Matter, under whatever Form it appears. All these Preparations have a great Affinity with Fire; for such Quintessences, being taken, heat the Body, and, if the Quantity be large, scorch and burn it; when externally applied, they produce all the Effects of a sharp Inflammation, even up to a Gangrene itself.

DRY QUINTESSENCES.

Take Alcohol, wherein an aromatic Oil is dissolved; pour it upon ten times its Weight of dry Loaf Sugar, reduced to a fine Powder: Grind them together exactly, for a long time, in a glass Mortar, that they may unite; put the Mixture into a China Vessel, set it in a glass Body, kept on all Sides moderately warm, that thus the remaining Spirit, which moistens the Matter, may gently exhale, and, by means of a Still-head, be collected in the Form of a liquid Quintessence: And thus the

Sugar will remain dry in the China Veſſel, yet impregnated with the Quinteſſence. Let it now immediately be put into a glaſs Veſſel, cloſe ſtopp'd, and preſerv'd, under the Title of a dry Quinteſſence. By a Dram of the fineſt Wheat-flour, five Drams of Loaf-ſugar, and grinding them dry in a glaſs Mortar, then adding a Dram of the liquid Quinteſſence, and proceeding as before, an elegant dry Quinteſſence will be obtain'd.

By taking a Dram of the liquid Quinteſſence, and half a Dram of the eſſential Extract of Saffron, and three Drams of fine Sugar, and as much fine Wheat-flour, and proceeding as before, nearly the ſame Kind of Preparation will be obtained, but more compounded.

As any of theſe Kinds of Oil may be diſſolved in Alcohol, and ſo brought into an uniform Liquor, though conſiſting of various Sorts, and thus employed to the ſame Uſes, it appears, that theſe noble Compoſitions may be made by various Mixtures, at the Diſcretion of the Artiſt. Hence there are infinite Ways of varying theſe Forms, each whereof may, for Excellence, vie with the reſt.

REMARKS.

Here we ſee to what a Length Chymiſtry may reach, in affording Forms of Medicines, of great Efficacy, in little Compaſs: For if a Scruple of the dry Quinteſſence be mixed with an Ounce of *Spaniſh* Wine, we have, hence, a little Draught, containing the utmoſt Virtue that can be obtain'd from Aromatics. If, therefore, a prudent Phyſician ſhall juſtly know the Neceſſity and Uſe of ſuch a Remedy, he may hence derive it from Chymiſtry for his Purpoſe. Theſe Preparations have this Convenience, that they may long be preſerved perfect for Uſe, and may be ſafely and commodiouſly carried in Voyages, Journeys, and Camps, where furniſhed Shops are not at hand. Here, again, we have the Bounds of chymical Perfection. *Boerhaave's Chymiſtry.*

QUINTANA. An Ague, the Paroxyſm of which returns every fifth Day.

QUINTI ANTIDOTUM. The Name of an Antidote, deſcrib'd by *Oribaſius*, *Collect. Medicinal.*

QUINUA. See AMARANTHUS.

QUIRAPANGA. The Name of a ſmall white Bird found in *Braſil*, remarkable for nothing but the Shrilneſs of its Voice, which may be heard half a League. *Lemery des Drogues.*

QUISQUILA. The COTURNIX.

QUISQUILIUM. A Grain of *Chermes.*

QUITY. See ARBOR SAPONARIA.

QUIYA. See CAPSICUM.

QUOCOLOS. The Name of a Stone found in *Tuſcany*, as hard as a Flint, ſomewhat tranſparent, and, in ſome meaſure, reſembling Marble. In the Fire it loſes its Tranſparency, and becomes leſs ponderous, and white; and a ſtrong Fire readily converts it into Glaſs. It has no medicinal Virtues, but is uſed at ſome Glaſs-houſes.

QUOTIDIANA FEBRIS. A Quotidian Fever.

Among the intermittent Fevers, thoſe of the quartan and tertian Kinds happen more frequently than the quotidian, which ſeizes and terminates every Day, with a ſubſequent Intermiſſion, for the Space of ſome Hours.

The Acceſſion of this Fever happens early in the Morning, about four or five a Clock; and is accompanied with Cold and Horror, though without any Rigor. During the Paroxyſm, there is a Cardialgia, accompanied with a Nauſea: Some are afflicted with Head-achs, others with Deliquiums, and moſt with a Vomiting, or Purging, or both: This State is ſucceeded by a Heat rather ſlow than exceſſive, whilſt the Thirſt is leſs intenſe than before; the Pulſe, alſo, though before irregular, and weak, becomes more frequent, and not ſo hard, but conſiderably ſofter: Nor is the Urine high-colour'd, but rather crude, turbid, and of a Citron-colour. Many Patients, labouring under Quotidians, have an unſurmountable Propenſity to Sleep; at laſt, a gentle Sweat appears on the Body; and after ten, or, perhaps, more Hours, the Paroxyſm is removed, leaves the Body languid and heavy, and returns next Day at a ſtated Hour.

This is generally the manner in which a genuine intermitting Quotidian ſeizes, and proceeds; but ſuch Quotidians as do not preſerve this Type, but have their Acceſſion either about Noon, or about the Evening, or at uncertain Periods, are call'd ſpurious, erratic, or anomalous Quotidians.

This irregular Species of Quotidian is frequently obſerv'd to be epidemical, eſpecially during a long-protracted, irregular, and inſalutary Conſtitution of the Weather. After the long-continued Heat in the Years 1727 and 1728, I obſerv'd, that, according to the Diverſity of Conſtitutions, not only Diarrhœas and Dyſenteries, but, alſo, intermittent Fevers of various Kinds, eſpecially Quotidians, were produced.

But as we are treating of an intermittent Quotidian, we ſhall not confound it with that of the continual Kind, which, alſo, has its Acceſſion early in the Morning, with a cold Fit; but the Heat and Languor, the Quickneſs and Weakneſs of the Pulſe, the want of Appetite, and, ſometimes, a colliquative Sweat, remain all the reſt of the time. If this Species of Quotidian is long protracted, it generally proves mortal; ſince the Patients, after their Strength is exhauſted, die under the cold Fit.

Nor is a genuine intermittent Quotidian to be confounded with a catarrhous Quotidian; ſince the latter, when of a benign Nature, ſeizes the Patient, towards the Evening, with a Kind of gentle Refrigeration, goes off in the Morning, and is ſufficiently diſtinguiſhable, by the catarrhous Defluxions with which it is accompanied. A catarrhous Quotidian, on the contrary, when of the malignant Kind, is eaſily known, from the remarkable Loſs of Strength, and the Watching; nor does it totally intermit, but remit.

The genuine intermittent Quotidian, alſo, differs from other intermittent Fevers; for when a ſimple Tertian becomes double, the Paroxyſm ſeizes every Day: But the Times of Acceſſion do not alternately correſpond to each other; neither are their Cauſes, and the Methods of Cure to be taken, the ſame.

If, from a Quartan, the Fit becomes quotidian, it is called a triple Quartan, and the Paroxyſm does not every Day return at one ſtated Hour, but, every fourth Day, has the ſame ſtated Period of Acceſſion: In theſe, alſo, the Methods of Cure are different, becauſe they proceed from different Cauſes.

A genuine intermittent Quotidian, alſo, differs from a ſlow Fever, becauſe the latter ſeizes after Meals, and towards the Evening, without Horror, but is accompanied with Heat in the Palms of the Hands, and Soles of the Feet: It is, alſo, more violent in the Night, than in the Day-time; is accompanied with Sweat, and remits in the Morning, though it does not totally intermit.

Now as the proximate Cauſe of every Fever is a Diſorder of the nervous Syſtem, ſo it is certain, that the formal Cauſe of a Quotidian conſiſts in a ſpaſmodic Agitation of the nervous Parts, and the Veſſels: But this preternatural febrile Commotion is brought on by a Matter quite foreign to the natural and mild Quality of the vital Humours conveyed to the Blood; though, at the ſame time, incapable of being mixed with it.

For the *Primæ Viæ*, the Stomach, *Duodenum*, and the largeſt Part of the *Jejunum*, which is furniſhed with Valves, are the Seats in which the peccant Matter, which, in ſome of its Qualities, reſembles Leaven, is lodg'd; from theſe it is convey'd through the lacteal Veſſels to the Blood and Humours, whence, being carried to the delicate and ſenſible internal Parts, it agitates and ſtimulates them to a preternatural and extraordinary Motion: And that, during a quotidian Fever, the *Primæ Viæ* abound with various Kinds of peccant, corrupted, viſcid, acid, and bilious Juices, is certain, from ſeveral Circumſtances: For a Quotidian is generally accompanied with Eructations, a Nauſea, a Deſire of Vomiting, want of Appetite, a Cardialgia, and Inflation of the Thorax, an Uneaſineſs of the Præcordia, and Oppreſſion of the Breaſt; and, ſometimes, a tenſive, pungent, and biting Pain, reaching to the Back: A diſagreeable, fetid, and, ſometimes, a bitteriſh, or a ſomewhat ſweetiſh and nauſeous, and ſometimes a plainly nidorous Taſte, is perceiv'd in the Mouth; and, at laſt, the Fever is frequently terminated by a ſpontaneous Purging; but an artificial Cure is moſt happily effected by Emetics and Purgatives, in Conjunction with Stomachics.

But becauſe this Fever is often protracted for many Months, it is juſtly to be ſuſpected, that the Diſorder is deeply rooted in the Receſſes of the lower Belly; for the ſecretory Organs, the Glands, and glandular Coats of the Inteſtines, being too much relaxed, inſtead of a ſubtil, lymphatic, and ſalival Juice, diſcharge a large Quantity of an impure and ſerous Humour. The other Viſcera, alſo, ſubſervient to the Depuration of the Blood, ſuch as the Liver, Spleen, and Pancreas, in conſequence of their impaired Strength, and the languid Circulation of the Blood through them, ſend leſs pure, lymphatic, and bilious Juices, into the Organs of Digeſtion: Hence the Solution of the Aliments, and the Elaboration of the Chyle, are diſturb'd, and many ſerous and corrupted Crudities generated and accumulated in the *Primæ Viæ*, which aſſuming a worſe Quality, by their Continuance there, and being conveyed to the Blood, excite the febrile Commotion, as we have already obſerved.

The greater Frequency of the Paroxyſms in Quotidians, than in other Intermittents, is, in my Opinion, owing to a greater Weakneſs of the *Primæ Viæ*; for ſuch a remarkable Weakneſs greatly favours the Generation of Crudities, and is the Cauſe why they more quickly flow, and are collected there; as, alſo, why they are ſooner conveyed to the Maſs of Blood, and Membranes of the ſpinal Marrow.

Hence it is, that all Things which tend to bring on a Flaccidity of the Viſcera, or generate crude and impure Juices, lay a Foundation for quotidian Fevers, which are principally incident

to thoſe of languid Conſtitutions, thoſe addicted to Idleneſs, thoſe who uſe crude Aliments, live irregularly, drink too much Malt Liquors, indulge themſelves in Grief and Care, and whoſe Stomachs are weakened by the Shocks of previous Diſeaſes, or by Hæmorrhages. It is more frequent in Winter, the Autumn, and cloudy Weather, than at other Seaſons; old Perſons are more ſubject to it than others, Women more than Men, Perſons of pituitous, phlegmatic, and ſanguineous Conſtitutions, more than thoſe of bilious and melancholic Habits. A Quotidian is, alſo, quickly generated, by other Intermittents, eſpecially when the Patient uſes improper Aliments, is frequently ruffled by the Sallies of Paſſion, has the Strength of his Stomach impair'd by ſtrong Purgatives and Emetics, uſes anodyne, hot, and ſpirituous Subſtances, or, neglecting to have his *Primæ Viæ* cleanſed, prepoſterouſly uſes Aſtringents and Specifics.

An intenſe genuine Quotidian, ariſing from a want of due Tone in the Viſcera, is generally long protracted, and creates a great deal of Trouble to the Phyſician; but erratic and epidemical Quotidians, which depend only on a peccant State of the Juices, are more eaſily cured.

Quotidians which have a total Intermiſſion of the Paroxyſm, are leſs dangerous than others; but thoſe which incline to the Nature of the continual Kind, and which, after the Paroxyſm, leave the Strength languid, the Pulſe weak and frequent, and the Body, as it were, diſſolved into Sweat, are protracted for ſome Months; theſe ſo weaken the Patient, that he is generally taken off by them.

Quotidians ſucceeding other Intermittents, eſpecially of the quartan Kind, are highly obſtinate, and dangerous. Thus *Celſus, in Lib. 3. Cap. 15.* tells us, *that a Quartan ſeldom proves mortal; but, if it degenerates into a Quotidian, the Patient is in a bad Situation:* For this Circumſtance indicates, that there is a great Diſorder of the Viſcera; and, in this Caſe, the Fever generally bears an Affinity to thoſe of the continual Kind.

When, in the Beginning of the Paroxyſm, bilious and pituitous Vomitings and Stools are evacuated, it is a good Sign, unleſs the Strength is already unhappily exhauſted, by the Length of the Diſeaſe: A gentle Eruption of Sweat, alſo, in the Decline of the Paroxyſm, and a copious Diſcharge of Urine with a Sediment, after the Fit, diminiſh the Violence of the ſubſequent Paroxyſms, and prognoſticate a happy Termination of the Fever.

On the contrary, when there is no Excretion, the Fever is long protracted, and the Viſcera acquire ſuch a Diſorder, as to bring on Cachexies, ſlow and hectic Fevers, Conſumptions, and, in thoſe diſpoſed to it, a Phthiſis.

The ſame Misfortunes, alſo, readily happen, when Aſtringents, and ſpecific Febrifuges, are prepoſterouſly uſed; and if, by hot, ſudorific, and ſpirituous alexipharmic Eſſences, the acrid Recrements are forced from the *Primæ Viæ* into the Blood, the Quotidian ſoon paſſes into a continual Fever, accompanied with a perpetual Sweat, and a Loſs of Strength.

In Patients who die of Quotidians, the cold Fit is highly intenſe, laſting, and accompanied with a Rigor, a Loſs of Strength, and a Perturbation of Mind: They generally have two Fits of this Kind, ſucceeded by Heat; but, under the third Fit, the Pulſe is weak, and unequal, and the Cold terminates in a mortal Rigor.

The General Method of Cure.

Since the Cauſes of an intermittent Quotidian are a Collection of ſerous and viſcid Crudities in the *Primæ Viæ*, a flaccid State of the Viſcera and Glands, and an obſtructed Circulation of the Blood through the Veſſels of the lower Belly; ſo the only Intentions of Cure muſt be,

1. To prepare, and, by proper Emunctories, evacuate the impure and peccant Juices from the *Primæ Viæ*.

2. To corroborate the Viſcera, whoſe Tone is impaired; and, by that means, prevent the farther Generation of Crudities. And,

3. To reſtore the free Circulation of the Blood through the abdominal Viſcera and Inteſtines, which are the Organs deſtin'd for the Digeſtion of the Aliments, and the Elaboration of the Chyle.

The firſt of theſe Intentions is excellently anſwered, by inciding and abſtergent Subſtances, and neutral Salts; the moſt efficacious of which are depurated Sal Ammoniac, the digeſtive Salt of *Sylvius* prepared of the Caput Mortuum of urinous Spirit of Sal Ammoniac, vitriolated Tartar, the *Arcanum duplicatum*, *Epſom* Salt, *Sedlitz* Salt, and antimoniated Nitre: Such Subſtances, alſo, anſwer this End, as abound with an acrid aromatic Salt; ſuch as the Roots of Cuckowpint, *Calamus aromaticus*, white Burnet, true Coſtus, and Zedoary; together with *Winter*'s Bark, Ginger, and white Pepper; which, when reduced to a Powder, and mixed with the above-mentioned Salts, with the Addition of a Drop or two of ſome carminative Oil, make an excellent antifebrile Medicine.

For anſwering the firſt, as well as the ſecond Intentions, that is, gently to evacuate the Sordes by Stool, and, at the ſame time, to corroborate the Tone of the Stomach and Inteſtines, and reſtore their diſturbed Motion to a due State, the moſt efficacious Medicines are, the balſamic Pills of *Becher*, thoſe of *Stahl*, and thoſe directed by myſelf; as, alſo, the *Pilulæ Aloephanginæ*, the *Pilulæ de Succino Cratonis*, and the *Pilulæ Solenandri*, eſpecially if exhibited in Conjunction with the above-mentioned Salts.

But, for reſtoring Strength to the abdominal Viſcera, and to prevent an Afflux of impure Juices to the Organs of Digeſtion, the moſt efficacious Medicines are, bitter Elixirs, mixed with Chalybeates, ſuch as my temperate balſamic Elixir, prepared without Spirit of Wine, with an alcaline Liquor, or Eſſence of *Caſcarilla*, mixed with Eſſence of Ginger; or ſtomachic Elixirs, ſuch as my Elixir, or that of *Michaeli*, with the Addition of a few Drops of a chalybeated Tincture, prepared of the chalybeated Flowers of *Sal Ammoniac*, with rectified Spirit of Orange-peel.

By theſe, alſo, the Circulation of the Blood through the abdominal *Veſſels*, and the Organs of Digeſtion, is excellently promoted: However, if the Quotidian is obſtinate, and ſupported by an irregular Regimen, the moſt efficacious Medicines are, medicinal Waters, eſpecially thoſe of the hot and cold Kinds; ſuch as the *Caroline* and *Egran* Springs, drank warm; which, uſed with a proper Regimen, and an Intermixture of bitter, balſamic, and anticachectic Medicines, dilute the viſcid *Sordes*, evacuate them by Stool and Urine, together with the ſerous Recrements, remove Infarctions, and reſtore the free Circulation of the Blood.

But the particular Method of uſing theſe is to be varied, according to Temperaments, Ages, the Seaſons of the Year, the Conſtitution of the Patient, the State of the *Primæ Viæ*, the Sex of the Patient, and the Cauſe of the Diſeaſe; to each of which Circumſtances, both the Doſe of the Medicines, and the manner of their Exhibition, are to be accommodated. It is, however, to be obſerved, in general, that, on the Hours free from the Paroxyſm, ſaline Powders are to be exhibited, with inciding Liquors; and, on the third or fourth Day, the Body is to be rendered ſoluble, by proper Pills, but in ſuch a manner, as that their Operation may be over before the Paroxyſm begins; and the Sweat, about to make an Eruption in the Decline of the Paroxyſm, is to be promoted, by Reſt, and drinking warm Liquors; after which, we are to ſubjoin corroborative, bitter, chalybeate, and antifebrile Medicines.

Practical Cautions, and Obſervations.

Quotidian intermittent Fevers are to be treated with great Circumſpection, leſt they ſhould degenerate into other chronical and dangerous Diſeaſes. The Patient is, in a particular manner, to abſtain from aſtringent and paregoric Medicines, large Quantities of precipitating earthy Subſtances, and all draſtic, purgative, ſudorific, and emetic Medicines.

It, alſo, contributes greatly not only to promote the Cure, but, alſo, to prevent the Return of a quotidian Fever, to avoid all Commotions of Mind, eſpecially Sorrow, and long-protracted Anxiety; and to guard againſt infalutary Aliments, the Uſe of Wine, and Refrigeration, eſpecially of the Abdomen.

As Nature often happily terminates Quotidians by a critical Flux, ſo her Indications are to be followed; and the Phyſician is to act in Concert with her ſalutary Efforts: For which Reaſon, the Patient is not to be reduced to a ſudorific Regimen, nor are Sweats to be forced by Medicines: But we ought, rather, to endeavour, that the peccant Matter, and the *Primæ Viæ*, ſhould be prepared and diſpoſed for a Flux; which End is excellently obtained, when, a few Hours before the Paroxyſm, a gentle Laxative, ſuch as the *Pulvis Cornachini*, or the *Pilulæ Balſamicæ*, is exhibited with ſome of the above-mention'd Salts.

Becauſe Quotidians are accompanied with a Vomiting, which proves beneficial to the Patient, this ſhould be promoted by proper Doſes of well-choſen Medicines, exhibited ſeaſonably. Hence it is ſometimes abſolutely proper, by means of Emetics, to excite a Vomiting before the Paroxyſm. I remember, in legitimate Quotidians, which uſed to have their Acceſſion about Five in the Morning, I have often, towards the Evening before the Crudities were conveyed from the Organs of Digeſtion to the Blood, exhibited a gentle Vomit, conſiſting of fifteen Grains of Ipecacuanha, and half that Quantity of the *Pulvis Cornachini*: By this means, a Vomiting was happily excited, and ſometimes a Purging, and the Fever, becoming conſiderably milder, was afterwards eaſily removed, by other Medicines.

If a Quotidian laſts for a Month, or longer, and ſeems, as it were, to degenerate into a ſlow Fever, we may commodiouſly exhibit one Grain of emetic Tartar, diſſolved in ſome proper Liquor; by which means, I have known an incredible Quantity of ſtagnant bilious Juices thrown up, and the Patient greatly relieved.

When Quotidians are accompanied with a Loathing of Food, a preſſory Pain, or Inflation of the Stomach, we are to apply to the epigaſtric Region ſmall Bags, either dry, or boiled in Wine, conſiſting of the Herbs Mint, Wormwood, and Roſemary; the Flowers of Spike and *Roman* Chamomile, Cloves, and Nutmegs: Theſe Bags, when applied after the Paroxyſm, are highly beneficial, by effectually promoting Perſpiration and Sweat.

In Quotidians of the legitimate Kind, we are to deal very cautiouſly with Febrifuges; but, in epidemic and erratic Quotidians, beſides the above-mentioned Medicines, we may, alſo, ſafely exhibit antifebrile Specifics, and that Electuary, the Baſis of which is *Peruvian* Bark, and that of Caſcarilla; ſince, by this means, a Solubility of the Body, and copious Stools, have been procured, without any Uneaſineſs to the Patient: But, in quotidian Fevers, the Bark of Caſcarilla is juſtly preferable to the *Peruvian* Bark, becauſe the former is more corroborative, and aſtringent, than the latter.

Veneſection is rarely proper in Quotidians which are already accompanied with a Weakneſs, eſpecially of the Stomach, and generally complicated with ſomething of a cachectic Nature: But if there is a conſiderable Plethora, eſpecially ariſing from a Suppreſſion of the Menſes, or Hæmorrhoids, and if the Urine is tinged, or the Patient accuſtomed to drink Wine, a Vein is to be opened in the very Beginning of the Diſorder, leſt the Fever ſhould be increaſed, and, according to the Obſervation of Phyſicians, ſlow, hectic, and apoſtematous Fevers brought on. *Hoffman.*

R.

R.

R. For the Signification of this Letter in the Chymical Alphabet, see ALPHABETUM CHYMICUM. ℞ in Prescriptions, imports *Recipe*, Take.

RABDOIDES SUTURA. The Sagittal Suture.

RABEBOIA. The Roots of the *Flammula Major*. *Rulandus*.

RABIEL, or ROHEL. Dragons Blood. *Rulandus*.

RABIES. See HYDROPHOBIA.

RABIRA. Tin. *Rulandus*.

RACEMUS. A Bunch of Grapes; or of Ivy-Berries; or of any other Fruit which grows in Clusters.

RACHAMMELCA. A new Term coined by *Dolæus* from the *Hebrew* Word רחם *Rechem*, signifying the *Uterus*, and מלך *Melech*, a King. By this Word he intended to express what they call the active Principle, or the *Plastic Spirit of the Uterus*.

RACHI, or RACHO. Mercury. *Rulandus*.

RACHITÆ, or RACHIÆI. The Muscles belonging to the Back. *Blancard*.

RACHITIS.

This Disorder, generally known by the Name of *Rickets*, is a kind of partial Tabes, and consists in an unequal Nutrition, by which some Parts are deprived of their due Nourishment, and waste away, whilst others receiving more than enough, are preternaturally increased with an Incurvation of the Bones and Spine of the Back.

This is a new Species of Disorder; for it only made its first Appearance in *England* about the Middle of the Seventeenth Century; and was afterwards spread through all the Northern Parts of *Europe*. It principally discovers itself by these Signs: The Disorder appearing about the ninth Month of the Child's Age, or later, the Proportion of various Parts of the Body gradually becomes irregular; the Skin lax, the Abdomen large, and, as it were, turgid with Flatulences. The Muscles are consumed by an Atrophy, whilst the Joints of the Arms, Hands, Knees and Feet, become protuberant. The Bones are also render'd incapable of sustaining the Body, and the Spine of the Back is frequently enervated. Hence the Patient is hardly able to walk, and often intirely incapable of moving. Then the jugular and carotid Arteries become tumid, the Head large, and frequently nodding, in consequence of the weak and flaccid State of the Neck. The Genius is for the most part more acute than is usual at that Age. The Chest is narrow, and, as it were, compressed on the Sides; the Sternum accuminated, and the Extremities of the Ribs full of Knots. As the Disorder increases, it is accompanied with a slow Fever, a Cough, a Difficulty of Breathing, and other Symptoms which generally continue till the Patient dies. But 'tis carefully to be observed, that there are certain Degrees and Periods of Duration in the *Rickets*, which don't produce the same Symptoms in all Patients; but in some, those of a violent, and in others, those of a mild Kind.

In dissecting those who die of the *Rickets*, sometimes one, and sometimes another of the Viscera is found corrupted; for in some, the Liver is preternaturally large, scirrhous, and adhering to the Diaphragm, whilst the Mesentery and Pancreas are obstructed, and full of indurated Glands. In others, the Lungs adhere either to the Pleura or Back, and are either livid or full of Vomicas. In others, the Pericardium is full of Water. Most Authors, among whom are the celebrated *Glisson*, *Bonetus*, and *Heister*, unanimously agree, that in Patients who die of the *Rickets*, the Beginning of the Spinal Marrow is preternaturally hard and obstructed; the Space between the Dura and the Pia Mater full of Water; the Brain excessively large, and the carotid and jugular Veins smaller than their correspondent Arteries.

Induced by Experience and the Authority of these Authors, we shall, as the Cause of the *Rickets*, assign the intercepted Ingress of the nervous Fluid into the spinal Marrow, either in consequence of its Obstruction or Compression. Hence the Nutrition of those Parts which receive Nerves from the spinal Marrow, such as the Arms and Legs, must necessarily be destroyed; whilst, on the contrary, those are preternaturally nourished, whose Vessels are pervious, and receive too large a Quantity of nutritive Juice; as is observable in the Heads of *rickety* Patients, which, in consequence of the intercepted Influx of the nutritive Lymph into the spinal Marrow, receive too much Nourishment; which not only renders them preternaturally large, but also their Faces ruddy and well-coloured. Nor is the Brightness of their Genius to be otherwise accounted for, than from the Soundness of the Brain and Cerebellum, which duly discharge their respective Offices. For which reason, the Parts to which Nerves are distributed from the Brain, are generally in a good Condition.

'Tis also obvious why the Bones are incurvated and deformed with Knots about their Epiphyses; for because the Muscles and their Ligaments, by which the Bones are joined, are not in this Disorder duly nourished, whilst the Nourishment is copiously conveyed through the Arteries to the Bones; it generally happens that the Extremities of the Bones, which in Children are of a soft Texture, are, in consequence of the small Resistance, distended and elevated into Tubercles. And since during this Nutrition, the Bones perpetually increase, and the Muscles become smaller and shorter, the Elongation and Extension of them is easily retarded by the Muscles which adhere to them. Hence an Incurvation of the Bones happens; and so much the more easily, because at this Age they are highly soft and flexible. Nor is the Distortion of the Spine of the Back owing to any other Cause, than the Flaccidity and the Destruction of the natural Tone of the bony Processes, Cartilages, Ligaments, and Muscles, connecting the Vertebræ of the Back; and during this Flaccidity, these Parts, upon inclining the Body, recede too far from each other, and are too much distended to be again restored to their natural Situation.

The immediate Cause of the *Rickets* is a viscid Tenacity of the Juices, which being separated from the inspissated Blood, are deposited on the spinal Marrow; and, by compressing or obstructing its Pores, hinder the due Influx of the subtile nervous Fluid into it; so that it cannot be farther distributed through the Nerves.

Among the remote Causes of the *Rickets* produced by an improper Regimen, we may reckon all those Circumstances which bring on an Atrophy; for 'tis certain, from Experience, that whatever disturbs Digestion, and generates a thick viscid Chyle, unfit for Nutrition, has a Tendency to bring on the *Rickets*.

But nothing more effectually contributes to the Production of this Disorder, than an Air which is cold, cloudy, and impregnated with various hurtful Exhalations; since such an Atmosphere, partly by debilitating the Tone of the Skin, retains the pituitous Sordes in the Body; and partly by relaxing the Lungs, hinders the intimate Mixture of the Blood in them, and prevents its due Distribution through the whole Body. A memorable Instance of this is found in *London*, which, in consequence of the prodigious Quantity of Exhalations, and the Particles of the Smoke, arising from fossile Coal, is found very fit, not only for producing, but also for supporting the *Rickets*. Nor is it surprising why, from the same Cause, this Disorder is most frequent in maritime and marshy Places, as also in the Spring and Autumn: And why in Towns situated by large Rivers, incommoded with a moist Atmosphere, clouded with saline effluvia, or the sulphureous Smoke of fossile Coal, so many Children are subject to the *Rickets*.

Nor shall I hesitate to affirm, that the Stagnation of the Humours in the spinal Marrow, is greatly promoted by the foolish Custom of Nurses, who, for whole Days, carry Children in their Arms, wrapt up in a Cloak; and not only, for a long time, keep the Spine of the Back in an incurvated Posture, but also bend the Legs unequally. Hence crooked Backs and Legs are not only produced, but a favourable Foundation laid for the *Rickets*. The like also happens, when Infants, by a Blow or Fall, have the Spine of their Back distorted; for which reason gibbous Children easily become subject to the *Rickets*.

Nor is it to be doubted, that previous Diseases dispose not only to a Consumption, but also to the *Rickets*. But among all Diseases, none so effectually contribute to the Production of this Disorder, as those which, by bringing on a Deposition of Humours on the spinal Marrow, suspend and prevent the free Ingress and Egress of the nervous Fluid to, and from it. Thus, in Practice, we often find the *Rickets* arising from this Cause, after an ill-managed Small-Pox; as also after the Repulsion of the Itch, the Crusta Lactea, or a scald Head.

As for the Prognostics of this Disease; if it is violent, and lasts till the fifth Year of the Patient's Age, or longer, it is not to be cured without Difficulty; generally renders the Body languid and deformed; and unless, as Youth advances, when the whole Body undergoes a great Change, it is totally removed, it becomes incurable during the whole of the Patient's Life. Nor is it to be cured with less Difficulty, when it is hereditary, or appears in the first Month after the Birth of the Infant. When the *Rickets* are succeeded by a Phthisis, accompanied with an hective Fever; by a Dropsy, an Asthma, or a Diarrhœa; only faint Hopes of the Patient's Recovery are to be entertained. But the *Rickets* which arise from a Fault of the Regimen or Air, which are succeeded by the Small-Pox, Itch, or other Efflorescences of the Skin, and are not accompanied with a great Incurvation of the Bones, and an Inability to Motion, are more easily cured.

The CURE.

When viſcid, tough and pituitous Humours depoſited on the ſpinal Marrow, are the Cauſe of the *Rickets*, the firſt Intention of Cure is to reſolve the Viſcidity of the Juices, remove Obſtructions, and by that means promote a free Circulation of the Humours through all the Body. For this purpoſe, in order to remove the Fountain of the Diſorder lodged in the Primæ Viæ, we are, above all things, to uſe gentle Laxatives; not neglecting, if it is neceſſary, and the Conſtitution of the Child admits, the Uſe of mild Emetics, conſiſting of a few Grains of the Root of Ipecacuanna, exhibited with Sugar and Cinamon-Water, prepared without Wine, or reduced to the Form of an Electuary, with ſome proper Syrup; for by theſe means the viſcid Sordes, collected in the Stomach and Inteſtines, are not only excellently eliminated, but alſo by the Stimulus of ſuch Medicines, a due Reſolution of the Humours, and an Opening of the obſtructed Veſſels, are ſucceſſfully obtained: Only ſuch ſtimulating Medicines are not to be exhibited to Patients whoſe Strength is exhauſted, who labour under any Diſorder of the Meſentery, or a violent Obſtruction of the Viſcera; ſince, in ſuch Caſes, it is more expedient to exhibit Medicines of the *deobſtruent kind*.

To the Medicines already recommended, we may alſo, now and then, add thoſe of a gently reſolvent kind, as Diaphoretics generally are; ſuch as the Tincture of Tartar, the acrid Tincture of Antimony, and Preparations of Cinnabar; which in the *Rickets* are preferable to Mercurials, and highly beneficial in eliminating the ſerous Impurities, partly by Perſpiration, and partly by Urine; eſpecially if they are exhibited in ſuch Infuſions as dilute and purify the Blood.

But in particular, for removing the Obſtruction of the ſpinal Marrow, and reſtoring the Influx of the nervous Fluid into it, various Authors recommend Frictions of the Spine of the Back, Arms and Legs, with warm Linen-Cloths; as alſo Fumigations of Frankincenſe, Amber, Maſtich, and Olibanum. But I can, from Experience, recommend as the moſt effectual Remedy, Baths of ſweet Water, boiled with Nervous Herbs, ſuch as Marjoram, Lavander, Mother of Thyme, Roſemary, Chamomile and Baum. In ſuch Baths, the Patient is to be frequently immerſed, and have the Spine of the Back and Joints rubbed and anointed with the following Nervous Ointment.

> Take of human Fat, and expreſſed Oil of Nutmegs, each half an Ounce; of Peruvian Balſam one Dram; and of the Oils of Rue, Lavander and Cloves, each thirty Drops.

By theſe means I have often ſeen many Patients afflicted with the *Rickets*, not only ſurpriſingly relieved, but alſo totally recovered.

But theſe Meaſures are carefully to be accompanied with a proper Regimen; for the Patient is by no means to uſe flatulent viſcid Aliments, or ſuch as are of difficult Digeſtion: But he may frequently uſe weak Broths, prepared of Fowls or Veal, with the aperient Roots of Aſparagus, Fennel, Succory, Smallage, Celeri, Parſley, and River-Crabs bruiſed. Then, in order to corroborate his Stomach, temperate ſtomatic Elixirs, ſuch as the Viſceral Elixir, are to be mixed with his Aliments. His Drink is to be thin, and during the Time he is ſuckled, the Milk ſhould be good and ſufficiently thin; adding, at the ſame time, proper Exerciſe ſuited to his Age; ſuch as Geſtation, that his languid Body may be only gently exerciſed. If he is coſtive, his Body is to be render'd ſoluble by a Laxative, or a Glyſter. If the Diſorder is either brought on, or ſupported by a bad State of Health in the Nurſe, the ſame Medicines are to be exhibited in larger Doſes to her.

For an Incurvation of the Spine, and Members variouſly diſtorted, we muſt alſo recommend Swathing, and the Uſe of proper Stays, provided due Care is taken to do no Injury by them; ſince often, by theſe means, the Infant is thrown into another more dangerous Diſorder. *Frederic Hoffman.*

Children are never born with the *Rickets*; for this Diſorder is rarely incident to them before they are nine Months old, and hardly ever ſeizes them after they are two Years of Age, but frequently happens in the intermediate Space between theſe two Periods.

This Diſeaſe is moſt incident and fatal to Children whoſe Parents are of a lax and weak Conſtitution; who are addicted to Idleneſs and Effeminacy; who live luxuriouſly, or uſe pinguious Aliments, Diſhes prepared with Sugar, a ſmall Quantity of Bread, ſweet Wines, and large Quantities of warm Water; who are exhauſted by chronical Diſorders, Venery, Age, a Tabes, eſpecially of the Venereal Kind, and repeated Gonorrhœas; for ſuch Perſons propagate a weak and languid Offspring.

When the Nurſe labours under ſuch Misfortunes, the *Rickets* are more quickly brought on, and increaſed in the Child.

Eſpecially if the Diſorder is treated with a cold and moiſt Regimen, and the Infant fed with aqueous and mucous Subſtances, crude Summer-Fruits, Fiſh, farinacious unleavened Bread; if the Infant has long laboured under an autumnal intermittent Fever, a chronical or acute Diſorder; if he has had the Itch, an Herpes, or Ulcers, ſuppreſſed, or ill-cured; if he is enervated by Baths, Fomentations, Liniments, Ointments, or moiſt Vapours; if he remains conſtantly without Motion in a perforated Chair, with the inferior Parts of his Body naked.

This Diſorder, when beginning, is known in thoſe who cannot walk, firſt, from the Age; ſecondly, from the preceding Cauſes; thirdly, from the Brothers or Siſters of the Infant being ſeized with the like Diſorders. Fourthly, from a flaccid Swelling of the Head and Face. Fifthly, from the lax State of the Skin. Sixthly, from the Swelling of the Abdomen. Seventhly, from the Leanneſs of the other Parts, eſpecially of the Muſcles. Eightly, from the Protuberance of the Epiphyſes at the Joints of the Radius, Ulna, Humerus, Knee, Tibia and Fibula. Ninthly, from the Largeneſs of the Jugular Arteries and Veins, whilſt the others decreaſe.

But in Children who have begun to walk, the approaching *Rickets* are known, firſt, from the before-enumerated Signs; ſecondly, from a ſlow infirm Manner of Walking, a falling forwards, and an Inſtability which terminates in a perpetual Deſire of Sitting, which ſoon degenerates into a State of conſtant Decubiture, and at laſt an Inability of moving any of the Joints; the Neck in the mean time becoming flexile, and the Head nodding: And, thirdly, from the preternatural Ripeneſs and Force of the Genius; the genuine Exerciſe of the Senſes, the Appetite and Digeſtion remaining almoſt ſound and uninjured.

When the *Rickets* are of a longer Standing, the Patient's Head is preternaturally large, and its Sutures gaping; the Thorax at the Sides is compreſſed to the Sternum, which riſes in a kind of ſharp Arch; the Extremities of the Ribs are full of Knots; the Abdomen protuberant, and the Teeth carious and black; which Symptons gradually increaſing, frequently thro' the whole of the Patient's Life, produce the like terrible Diſorders, eſpecially a Spina Ventoſa, and a Caries of the Bones.

During the whole Courſe of the Rickets, a ſlow Fever preys upon the Body, till the Patient dies; and then in the Carcaſe all the Fibres, Membranes, Veſſels and Viſcera are found ſoft and flaccid, while the Humours are colliquated and mucous.

Hence the immediate Cauſe of the *Rickets* is, a languid, mucous Cold and vapid Cacochymy, perhaps complicated with a latent Venereal Taint, and accompanied with a lax and flaccid State of the ſolid Parts.

The Cure of the *Rickets* is moſt effectually produced by light, eaſily-digeſted, dry, lean Aliments, ſeaſon'd with mild Aromatics, and frequently exhibited, tho' in a ſmall Quantity; by drinking a ſmall Quantity of generous Liquors, eſpecially of Ale, tho' not old, but long boil'd and thick; by a dry and ſomewhat hot Air; by wearing very dry, and warm Clothes, eſpecially ſuch as are made of Wool; by lying upon Couches prepared of aromatic, corroborating, and drying Herbs, laid upon Boards, in the upper Rooms of the Houſe; by Geſtation, Concuſſion, Oſcillation, Riding in a Chariot in rough Roads; by much dry and warm Friction, eſpecially of the Abdomen and Spine, performed with Clothes, impregnated with the Smoke of Aromatic Subſtances; ſometimes by the repeated Application of Cantharides, by gentle Emetics, frequently tho' prudently repeated; by Purgatives, and then by corroborating Medicines, exhibited for ſome Days ſucceſſively; and laſtly, by the long-continued Uſe of corroborating, drying, antiſcorbutic Medicines, and ſuch as rouſe the Spirits. Hence we underſtand the Uſes of Immerſion in cold Water, for the Cure of this Diſorder, which, however, is not to be put into Practice, till the Viſcera of the Abdomen are, in ſome meaſure, eaſed of the Load of Humours which oppreſs them. Hence, alſo, the proper Uſe of Liniments may be underſtood, which ought to be of the nervous Kind, and applied to the Abdomen, and Spine of the Back; but not to the prominent Parts of the affected Bones.

The beſt Aliments for Children labouring under the *Rickets* are:

1. Well fermented Bread and Biſcuit, mixed with a ſmall Quantity of Saffron, Nutmeg, Cardammons, Cinnamon, Seeds of Celeri; and other grateful and corroborating Aromatics.

2. Lean Pigeons, Fowls, Rabbits, Mutton, Kid and Veal, gently roaſted, cut ſmall and mixed with Biſcuit, Salt, and a little Parſley, Thyme, and Nutmeg.

3. Millet and Barley, boil'd with Water and Raiſins; and then ſeaſoned with a little Wine and mild Aromatics.

The moſt proper Drinks for Perſons labouring under the *Rickets* are,

Ripe, red and aſtringent *French* Wines, an Ounce of which is to be exhibited three or four Times a Day.

Half an Ounce of Hippocratic Wine, exhibited at the ſame Time.

Lem-

Brunſwick Mum, *Britiſh* Ale, and that Species of *Dutch* Ale, which is ſold at twelve Florins.

With theſe Malt Liquors, in the Summer Time, may be mixed an equal Quantity of medicated Chalybeate Water, but rather of the Spaw Waters.

Take of the following recent Leaves dried in a Shade, *viz.* of the Male Fern, three Pounds; of Marjoram, Baum, and Mint, each two Handfuls: And of the following recent Flowers, alſo, dried in a Shade, *viz.* of Melilot, ſweet Trefoil, Elder, and Roſes, each two Ounces. Reduce to a fine Powder. Mix with double the Quantity of Barley-Chaff; and put all into Bags for Couches, on which the Patients are to lie; theſe are to be carefully preſerved from Moiſture, and frequently dried.

Take of Benzoin, Maſtick, Olibanum, Amber and Frankincenſe, each one Ounce; reduce to a Powder; of which throw a little upon live Coals, and the Steam ariſing from it is to be received in Clothes, for rubbing the Parts.

Take of the Roots of Ipecacuana, one Scruple; of white *French* Wine, one Ounce; and of Sugar, two Drams; infuſe for a whole Night; and when depurated, exhibit in the Morning. Let this be repeated every fourth Day for five Times.

Take of the beſt Rhubarb, half an Ounce; of Citrine Myrobalans, without the Kernels, three Drams; and of the Troches of Agaric, two Scruples. Infuſe in four Pints of cold ſtrong Beer, for twenty-four Hours; and let the Patient uſe this for common Drink for a Month: But if it ſhould prove too purgative, it may be diluted with an equal, or, if neceſſary, a greater Quantity of other Ale.

The corroborative, drying, exciting and antiſcorbutic Herbs proper for curing the *Rickets*, are, Agrimony, Betony, the Bark of Caper Roots, Spleen-wort, Succory, Dorder, Sanicle, Endive, Male Fern, Liver-wort, Harts Tongue, Baum, Myrobalans, Oſmund Royal, Polypody of the Oak, the Leaves and Acorns of the Oak, Rhubarb, the Leaves and Root of the Bramble, white Maiden Hair, Scabious, the Bark, Flowers and Leaves of the Tamariſk, Trichomanes, and Male Speedwell.

Of theſe medicated Ales, Wines, and Infuſions, may be prepared and exhibited with great Succeſs; as alſo Conſerves, and other Things of a like Nature, thus:

Take of Agrimony, Spleen-wort, Fern-Root, Harts Tongue, the Root of Polypody, and white Maiden Hair, each two Ounces. Having cut theſe ſmall, mixed them, and put them in a Linnen Cloth, infuſe them in twelve Pints of cold Ale, to be uſed for common Drink.

Or,

Take of the Leaves and Flowers of Betony, three Ounces; of the Barks of the Roots of Capers, Tamariſks, and wild Bramble, and of Trichomanes, each two Ounces; and of Filings of Steel, half an Ounce. Infuſe in eight Pints of cold White Wine, of which one Ounce is to be exhibited thrice a Day.

Take of *Boyle's Ens Veneris*, two Grains; which are to be exhibited every Evening in Canary Wine for three Weeks.

Take of the Filings of Steel, one Ounce; of the ſtrongeſt diſtill'd Vinegar, ten Ounces; and of Sugar, three Ounces. Boil all together gently for twenty-ſix Hours in a tall Phial; and let the Liquor, when filtrated, be kept in a cloſe Veſſel. Six Drops of it are to be exhibited every Morning and Evening in a little *Spaniſh* Wine.

Boerhaav. Aph. & Mat. Med.

RACRI, RAAN, or RANAC. Sal Ammoniac. *Rulandus.*

RADIÆUS, or RADIALIS. *Winſlow* takes Notice of three Muſcles under this Name; the firſt is the *Radialis Internus*, otherwiſe called *Flexor Corpi Radialis*. See FLEXOR.

The ſecond is the *Ulnaris Externus*, or *Extenſor Carpi Radialis*. This Muſcle *Winſlow* divides into two. In many Subjects, ſays he, we find theſe two Muſcles entirely diſtinct from one End to the other, and they may be named *Radialis Externus primus & Radialis Externus ſecundus*, regard being had to the Inſertion of their Tendons. Sometimes the two fleſhy Portions adhere cloſely together, appearing to make but one Body, but the Tendons are always diſtinct and ſeparate.

The firſt is inſerted above, in the *Chriſta* of the external Condyle of the *Os Humeri*, below the Inſertion of the *Supinator Longus*. The ſecond is inſerted in the ſame Condyle, below the Inſertion of the firſt; and in the neighbouring articular Ligament. From thence the two fleſhy Bodies run down very cloſe together; and having reached the Middle of the Outſide of the Radius, each of them terminates in a long Tendon.

The Radialis Externus, together with the Radialis Internus, turns the inner Edge of the Hand directly toward the Styloide Apophyſis of the Radius.

With the Ulnaris Externus it inverts the Hand, turning the Convex Side of the Metacarpus toward the lower Extremity of the Bones of the Fore-arm. It likewiſe moves the ſecond Row of the Carpus on the firſt, and thereby increaſes the tranſverſe Fold on the Convex Side of the Carpus. This Motion alſo encreaſes the Angle, which the Back of the Hand naturally makes with the Outſide of the Fore-arm; and therefore, according to the common Language, it would be more properly term'd a Flexion outward, than an Extenſion.

This Muſcle acting alone, draws obliquely, and toward the external Angle of the Radius, that Portion of the Hand, which anſwers to the firſt Metacarpal Bone, and to the Index; but not without ſome Difficulty.

Each of the two Radiales Externi may act ſeparately, and, conſequently, have diſtinct Uſes; ſince their Tendons having paſſed the Annular Ligament, are inſerted at ſome Diſtance from each other; and thereby one of them ſeems to be fitted to co-operate with the Radialis Internus, the other with the Ulnaris Externus; and they both ſerve conjointly to keep the Hand in its true natural Situation. *Winſlow.*

RADIATED FLOWERS. See FLOS RADIATUS, under the Article BOTANY.

RADICALIS. Radical. This, when join'd with *Humor*, ſeems to imply much the ſame as innate.

RADICISECA. A Servant of the ancient Phyſicians, employ'd in gathering, and cutting Roots and Herbs, and preparing them for Medicinal Uſes.

RADICULA. A Name for the *Raphanus*. According to *Blancard*, the *Romans* call'd the *Lychnis, Sylveſtris, quæ Saponaria, vulgo* by this Name.

RADIUS, in Anatomy, is the Name of a Bone in the Fore-Arm. See BRACHIUM.

RADIX ALBA, in *Hippocrates*, is the Root of the *Dracunculus*, as explained by *Galen*, in his *Exegeſis*.

RADIX BEZOARDICA, a Name for the CONTRAYERVA.

RADIX CARLO SANCTO.

This Root is found in temperate Soils, in *Mechoacan*, a Province of *America*. Its Bark is eaſily ſeparated from it, is of an aromatic Smell, and of a bitter and ſomewhat acrid Taſte. The Root itſelf conſiſts of very ſlender Fibrils, which are eaſily ſeparated from each other. The Bark is accounted ſudorific, and corroborates the Stomach and Gums. If chew'd it procures an agreeable Breath. It is good for Scurvies, Catarrhs, Epilepſies, haſtening Deliveries, and removing Hernias, and the Small Pox, if taken either in Powder or in the Form of a Decoction. The *Spaniards* have called it by the Name of *St. Charles*, on account of its uncommon Virtues. *Lemery des Drogues.*

RADIX CAVA. A Name for the *Moſchatellina Foliis Fumariæ bulboſæ; de qua Cordus.*

RADIX CHINA. See CHINA.

RADIX DULCIS. A Name for the *Glycyrrhiza, capite echinato.*

RADIX IDÆA. A Name for the *Ruſcus; Anguſtifolius; Fructu folio innaſcente.*

RADIX RINZANGO. *Sive Bengalenſis.* Supplem. 396.

This came in Uſe but very lately, for I find no mention of it in any Pharmacopœa, or Catalogue of Plants. As to its Virtues, it is recommended by Dr. *Tancred Robinſon*, as a very potent Cephalic.

RADIX SIMAROUBA, Offic. *Sima Ruba*, Geoff. Tract. 297. Ind. Med. 90.

This is the Root of a *Weſt India* Plant, which produces the *Cayan* Wood, remarkable for being very light. The Root and Bark are ſaid to be excellent Aſtringents, proper in all Sorts of Looſeneſſes, and eſpecially in Dyſenteries. The Doſe of the Root is an Ounce cut in ſmall Pieces; and of the Bark two Ounces; boil'd in three Pints of Water to a Pint. This Decoction the Patient uſes for his common Drink, till he is cured. *Geoffrey.*

RADIX URSINA. A Name for the MEUM.

The five Opening Roots are, thoſe of Apium, Aſparagus, Fennel, Parſley, and Butchers Broom: Theſe are by ſome Authors called the *greater Opening Roots*, to diſtinguiſh them from the leſſer, which are thoſe of Caper, Eryngo, Dogs Graſs, Reſt Harrow, and Madder.

RADIX SANCTÆ HELENÆ. *Cyperus Americanus.* Hernand.

This is a pretty long Root, full of Knots, black without, white within, and of an aromatic Taſte, almoſt like that of Galangals. It is brought dry from the Port of *St. Helena*,

in

in the Province of *Florida* in *America*, where it grows. This Root is good againſt Pains of the Stomach, and is of an highly aperient Nature. It is recommended againſt the Nephritic, Colic, and a Difficulty of diſcharging the Urine. It is, by ſome, bruiſed and applied to weak Parts, in order to ſtrengthen them. *Lemery Traité des Drogues.*

RADULA. A Raſpatory.

RAIA. Offic. Salv. de Aquat. 149. Schonef. Ichth. 57. Mer. Pin. 185. Bellon. de Aquat. 80. *Raia Clavata*, Aldrov. de Piſc. 450. Rondel. de Piſc. I. 353. Geſn. de Aquat. 795. Charlt. Piſc. 11. Raii Ichth. 74. Ejuſd. Synop. Piſc. 26. THE THORNBACK.

This is a Sea-Fiſh, of which the Fleſh, Liver, and Gall, are uſed in Medicine. The Fleſh is analeptic, and is ſaid to increaſe Venereal Vigour. The Gall is recommended againſt Dimneſs of Sight, and Exulcerations of the Eye; and is a Remedy for the Itch.

Pliny recommends the Gall for Diſorders of the internal Ear, *Lib.* 32. *Cap.* 7. See BATIS.

The Thornback is a Sea-Fiſh well known, of which there are ſeveral Species. Some have their Backs almoſt all over diverſified with white Points like Stars; others have none but on the Tail; another Kind taken at *Marſeilles* is greatly eſteemed.

This Fiſh is of a blackiſh Colour, multiplies faſt, feeds upon ſmall Fiſhes, and lives in muddy Places near the Shore. It affords nouriſhing, ſolid and durable Food; becauſe the viſcous Juices it contains adhere to the Veſicles of the Fibres, and make it hard of Digeſtion. It is ſubject to cauſe Wind, and produce heavy and groſs Humours, eſpecially if eaten before it is kept ſome Time. It contains much Oil and volatile Salt. It agrees at all Times with young, bilious and ſanguine People, who have good Stomachs. In ſome Places it is dried and will keep long, but it does not thus yield good Food. *Lemery of Foods.*

RAIZ-D'EMPOSE. A Name for the *Methonica Malabarorum.*

RALLUS. The Name of a River-Fowl, a Sort of Moor-Hen, frequent in *Italy*, and other Places. The Fat is eſteem'd reſolutive, emollient, and Anodyne. *Lemery des Drogues.*

RAMAG. Aſhes. *Rulandus.*

RAMALIS VENA. The *Vena Portæ*. *Theophilus de exacta Retrimentorum Veſicæ Cognitione.* C. 2.

RAMED. Rhubarb. *Rulandus.*

RAMENA-POU-MARAM. The Name of a very large and tall Tree, which grows in *Malabar*; to which I find no Medicinal Virtues aſcribed.

RAMENTUM. A Strigment, or ſmall Corpuſcle, abraded or ſcrap'd from any Body.

RAMEX. The ſame as HERNIA.

RAMIGRI. Colophony. *Rulandus.*

RAMUS. The Branch of a Tree; or Ramification of a Veſſel in the Body.

RANA. Offic. Mer. Pin. 169. Bellon. de Aquat. 54. Schonef. Ichth. 59. Rondel. de Aquat. 2. 218. Charlt. Exer. 27. Aldrov. de Quad. Ovip. 89. *Rana Aquatica* Schrod. 5. 331. Jonſ. de Quad. 130. Schw. Rept. 155. Raii Synop. A. 247. *Rana aquatica & innoxia*, Geſn. de Quad. Ovip. 46. THE COMMON FROG.

Frogs are of different Sizes and Colours, according to the Places where they are bred. Sea-Frogs are monſtrous, and not uſed for Food. Land-Frogs, called in *Latin Ranæ Sylveſtres*, nearly reſemble Water-frogs, only they are ſmaller, and not eat; but Water-frogs are much uſed.

The Water-Frog is an amphibious Animal; but keeps moſt in the Water, as in Rivers, Marſhes, Ponds and Fountains. It feeds upon Flies, Worms, Leaches, Snails, Inſects, and Herbs which grow in the Water; ſometimes alſo they devour their own Species, for ſmall Frogs are often found in the Mouths and Bellies of large ones. They ſwim faſt, and inſtead of walking, leap along.

In ſome Places they are much uſed for Food; tho' *Galen* ſo little regarded them, that he does not once mention them. Thoſe bred in Ponds and Marſhes are not ſo wholeſome as thoſe bred in Rivers, which abound with Phlegm, volatile Salt, and oily and balſamic Principles, which are proper for allaying ſharp Humours of the Breaſt, are a little nouriſhing, and of an opening and diſſolving Nature. From their Viſcoſity, however, they are hard of Digeſtion, and breed groſs Humours; and ſome Authors aſſure us, that the two frequent Uſe of them makes People look ſickly, and cauſes a Fever.

They agree at all Times with thoſe who are of young and bilious Conſtitutions, have good Stomachs, and are accuſtomed to Exerciſe; but old and phlegmatic Perſons ought to abſtain from them, or uſe them moderately.

Their Spawn is much uſed in Phyſic, is cooling and moiſtening, and proper for qualifying ſharp Humours: The Water diſtilled from it has the ſame Virtues. This Spawn is a viſcous Matter, tranſparent, cold, glewy, and full of ſmall Eggs. *Lemery of Foods.*

Emplaſtrum de Spermate Ranarum.
Plaiſter of Frog-Spawn.

Take of Frogs-Spawn, Oil of Frogs-Spawn, and Ceruſs, reduced to a fine Powder, each two Pounds; of white Vitriol and crude Alum, each an Ounce and an half; boil all together to the Conſiſtence of a Plaiſter: Then add of white Wax three Ounces; of Maſtich and Frankincenſe, each half an Ounce; and of Camphire three Drams. Make into a Plaiſter.

The Frogs-Spawn muſt be newly gathered, and mixed in a Baſon with the Oil of Frogs-Spawn, the Ceruſs, the Vitriol, and the Alum reduced to Powder. This Mixture muſt be boiled by a moderate Fire, to the Conſiſtence of a Plaiſter; then the white Wax muſt be melted in it; and when it is almoſt cold, incorporate with it the Maſtich and Incenſe reduced to a fine Powder; and laſt of all add the Camphire, diſſolved in about half an Ounce in the Oil of Frogs-Spawn. This Plaiſter is to be made up in Lumps for its better Preſervation.

It is proper for Wounds, accompanied with Inflammation; it deterges, corrects the Acrimony of the Humours, and dries. It is uſed in Wounds of the Eyes.

The Vitriol and Alum are not ordinarily mixed with this Plaiſter, till about the End of the Boiling: But as only the Phlegm can be extracted from theſe Mineral Salts by ſuch a Boiling, it is no matter whether they are put in ſoon or late. *Lemery Pharmacop.*

RANA VIRIDIS. Offic. Aldrov. de Quad. Ovip. 622. *Rana noſtra viridis*, Ind. Med. 96. *Rana aquatica viridis*, Schw. Rept. 158. *Ranunculus viridis*, Schrod. 5. 305. Jonſ. Quad. 133. *Ranunculus viridis, ſive Dryopetes*, Geſn. de Quad. Ovip. 60. *Agredula*, Iſidor. THE TREE-FROG.

The whole Frog, and its Blood, are uſed in Medicine. The Animal agrees in Virtues with the common Frog, and its Aſhes ſprinkled on Wounds are ſaid moſt effectually to reſtrain their Bleeding. The Blood is recommended as of peculiar Efficacy in a Philtre. *Dale from Schroder.*

RANCIDITAS. *Rancidity*; that ſort of diſagreeable Corruption which fat and oily Subſtances contract by Age and Heat.

RANCULA. An erratic Pain in a Wound, attended with Pain and Pulſation. *Johannes Anglicus.*

RANDIA.

The Characters are;

It hath a Flower conſiſting of one Leaf, whoſe lower Part is tubulous, but the upper Part is expanded, and for the moſt part divided into five Segments. The Flower is ſucceeded by an oval Fruit, having but one Cell, which is filled with flat cartilaginous Seeds ſurrounded by a Pulp.

Miller mentions but one Species of this Plant.

Randia fruteſcens, ſpinis bijugis, foliis ſubrotundis, floribus albis. Houſt. Shrubby *Randia*, with Spines growing two at a Joint, roundiſh Leaves and white Flowers. This Plant is figured and deſcribed by Sir *Hans Sloan* in his Hiſtory of *Jamaica*, under the Title of *Lycium forte, foliis ſubrotundis integris, ſpinis & foliis ex adverſo ſitis.* Vol. I. p. 40.

This Shrub grows plentifully about *La Vera Cruz*, whence the Seeds were ſent by the late Dr. *William Houſton*, who gave this Name to it in Honour of Mr. *Iſaac Rand*, a curious Botaniſt.

This Shrub riſes to the Height of ten or twelve Feet in the Country of its Growth, and divides into a great Number of Branches, which are always produced by Pairs oppoſite, as are alſo the Leaves and Spines. The Flowers are ſmall, and of a white Colour, which are ſucceeded by hard oval-ſhaped Fruit, about the Size of a large *Spaniſh* Nut, which is full of flat Seeds, incloſed in a ſoft blackiſh Pulp. The Leaves continue green throughout the Year. *Miller's Dictionary.*

RANGIFER. Offic. Jonſ. de Quad. 64. Charlt. Exer. 12. *Cervus Rangifer*, Raii Synop. A. 88. *Tarandus*, Aldrov. de Quad. Biſul. 859. *Tarandus, ſive Rangifer*, Geſn. de Quad. 840. *Tarandus*, Agricol. Eliot. THE RAINDEER.

It is an Inhabitant of *Lapland*, and its Horns and Hoofs are of uſe in ſpaſmodic Affections.

RANINÆ VENÆ. The large Veins under the Tongue.

RANULA. A Diſorder of the Tongue, or rather a Tumour under the Tongue. See LINGUA.

RANUNCULO AFFINIS. A Name for the *Hydrocotyle, Zeylanica, Aſari folio.*

RANUNCULOIDES. A Name for the *Hepatica; trifolia; cæruleo flore.*

R A N

RANUNCULUS.

The Characters are;

The Perianthium is generally pentaphyllous, sometimes hexaphyllous, and commonly caducous. The Flower is rosaceous, generally pentapetalous, or hexapetalous, and furnished with numerous Stamina. The Fruit is round or oblong, and contained in Capsules, each of which is furnished with an incurvated Tube, which varies according to the Species. The Plant, in other Respects, resembles the *Chelidonium Minus*.

Boerhaave mentions sixty-nine Species of *Ranunculus*, none of which have any particular medicinal Virtues ascribed to them at present, that I know of, except the 1st, 2d, 3d, 6th, 11th, 13th, 16th, 61st, 62d, 63d, and 68th.

1. Ranunculus pratensis; erectus; acris. *C. B. P.* 178. *Raii Hist.* 1. 583. *Synop.* 3. 248. *Boerh. Ind.* A. 30. *Tourn. Inst.* 289. *Ranunculus acris*, Offic. *Ranunculus rectus non repens, flore simplici luteo*, J. B. 3. 416. *Ranunculus pratensis, erectus, acris, vulgaris*, Park. Theat. 329. *Ranunculus surrectis caulibus*, Ger. 804. Emac. 951. UPRIGHT MEADOW CROWFOOT.

It grows in Meadows and Pastures, and the Herb is used. This Species of *Ranunculus* is of a caustic Quality, and if the recent Herb bruised be applied to the Skin, it excites a Pain and Inflammation. The Roots are in Request among the Rustic Sort of People, and Soldiers, for the Cure of intermittent Fevers.

2. Ranunculus; pratensis; erectus; acris; in folii medio maculatus. *C. B. P.*

3. Ranunculus; pratensis; erectus; dulcis. *C. B. P. M. H.* 2. 439.

6. Ranunculus; pratensis; repens; hirsutus. *C. B. P.* 179. *Tourn. Inst.* 289. *Boerh. Ind.* A. 31. *Ranunculus*, Offic. *Ranunculus pratensis, repens*, Park. Theat. 329. Raii Hist. 1. 581. Synop. 3. 247. *Ranunculus pratensis etiamque hortensis*, Ger. 804. Emac. 951. *Ranunculus repens flore luteo simplici*, J. B. 3. 419. CROWFOOT.

This has a small creeping fibrous Root, from which arise several hairy Leaves, cut into three Segments, each of which is divided into as many more, and are frequently spotted with white Spots on their upper Side. The Stalks grow not so upright as those of the *Ranunculus Pratensis, radice verticilli modo rotunda*, having longer and narrower Leaves, and not so divided; bearing on their Tops, round, five-leav'd, shining, yellow Flowers, with several yellow Stamina in the Middle. When the Flowers are fallen, the Head enlarges into a round Cluster of sharp-corner'd flattish Seed. This Species sends out Flagellæ from the Roots, by which it propagates itself. It grows frequently in moist Meadows, and by River-sides, and flowers in *May*. *Miller's Bot. Off.*

This Species is quite harmless, and is often boiled with other Greens in the Month of *April*. *Dale.*

11. Ranunculus; montanus; aconiti folio; albus; flore minore. *C. B. P.* 182. *Aconitum Ranunculoides, flore albo simplici*. M. H. 2. 450.

13. Ranunculus; pratensis; radice verticilli modo rotunda. *C. B. P.* 179. *Tourn. Inst.* 289. *Boerh. Ind.* A. 31. *Ranunculus bulbosus*, Offic. Ger. 806. Emac. 953. Park. Theat. 329. Raii Hist. 1. 581. Synop. 3. 247. *Ranunculus tuberosus major*, J. B. 3. 417. BULBOSE CROWFOOT.

This is the most common, and with this our Fields about Town are covered in the Spring. It may be known from the rest by its round white tuberous Root, having several Fibres at the Bottom. Its Leaves grow on longer Foot-Stalks; but it is cut into three Sections, like the *Ranunculus pratensis, repens, hirsutus*. It grows more erect, and the Calyx of the Flower turns back, and remains till the Leaves drop; whereas, in the creeping Sort, the Calyces fall off as soon as the Flowers are opened. It flowers in *May*, and is too frequent in our Fields and Meadows, being by the Vulgar called *Butter-Flowers*; they believing that the Butter receives its yellow Colour from these Flowers; whereas the Cows will meddle with none of the Crow-feet when green, by reason of their hot caustic Taste. *Miller's Bot. Off.*

The Root of this Plant is so acrid, that it may be used for Caustics and Blisters, but principally upon the Joints of those Parts which are infested with the Gout. They bruise this *Ranunculus*, and apply it to the Corns of the Feet, after they have been well softened in warm Water, and cut to the Quick. *Martyn's Tournefort.*

The Root is of admirable Efficacy in eroding, consuming, and drying hard Tumours; but loses its Virtue when dried.

16. Ranunculus; palustris; Apii folio; laevis. *C. B. P.* 180. *Boerh. Ind.* A. 31. *Tourn. Inst.* 291. *Ranunculus palustris*, Offic. Ger. 814. Raii Synop. 3. 249. *Ranunculus palustris rotundi folius*, Ger. Emac. 962. Raii Hist. 1. 585. *Ranunculus palustris sive minor*. J. B. 3. 858. *Ranunculus palustris Sardonius, laevis*. Park. Theat. 1215. ROUND-LEAV'D WATER CROWFOOT.

It delights in watery Places, and flowers in *June* and *July*.

This *Ranunculus*, *Dale* supposes the fourth Species of *Dioscorides*, who writes that the Leaves and tender Stalks being applied as a Cataplasm, are exulcerating and escharotic, not without Pain. Hence they cure scabrous Nails, remove the Psora, and obliterate the Marks of such as are stigmatized. The Application hereof cures also the Myrmeciæ, Acrochordones, and Alopecia, and that in a short time. A Decoction of the same is good to foment Chilblains. The Root dried and triturated, excites Sneezing, when applied to the Nostrils, and worn as an Amulet, eases the Tooth-ach, but it breaks the Teeth. *Dioscorides, Lib.* II. *Cap.* 206.

61. Ranunculus; gramineo folio; flore caudato, seminibus in capitulum spicatum congestis. See MYOSUROS.

62. Ranunculus; longifolius; palustris major. *C. B. P.* 180. *Boerh. Ind.* A. 34. *Tourn. Inst.* 292. *Ranunculus flammeus*, Offic. *Ranunculus flammeus major*, Ger. 814. Emac. 961. Raii Hist. 1. 587. Synop. 3. 250, *Ranunculus palustris flammeus major*, Park. Theat. 1215. *Ranunculus folio longo maximus, Lingua Plinii*. J. B. 3. 365. GREAT SPEAR-WORT.

It grows in marshy Ditches, and flowers in *June*; its Virtues are the same with those of the *Ranunculus palustris*.

63. Ranunculus; longifolius; palustris; minor. *C. B. P.* 180. *Tourn. Inst.* 292. *Boerh. Ind.* A. 34. *Flammula*, Offic. *Ranunculus flammeus minor*, Ger. 814. Emac. 961. Raii Hist. 1. 587. Synopf. 3. 250. *Ranunculus palustris flammeus minor sive angustifolius*, Park. Theat. 1214. *Ranunculus longifolius aliis flammula*, J. B. 3. 864. SPEAR-WORT.

It is found frequently growing in watery Meadows, and oozy Places, and flowers in *June*. The Herb, which is of Use in Medicine, agrees with the other Species in its caustic Quality. Its Leaves are sometimes even or entire, and sometimes serrated; in which latter Respect, it is called *Ranunculus flammeus serratus* by *Gerard* and *Parkinson*, and *Palustris serratus* by *C. Bauhine*.

68. Ranunculus; folio Cyclaminis; radice Asphodeli; major. *Tourn. Inst.* 285. *Boerh. Ind.* A. 35. *Thora*, Offic. *Thora Valdensis*, Ger. Emac. 966. Raii Hist. 1. 591. *Thora folio Cyclamini*, J. B. 3. 650. *Aconitum Pardalianches alterum, seu Thora minor*, C. B. P. 184. *Aconitum Pardalianches, seu Thora minor*. Park. Theat. 317. *Thora montis Baldi, sive Sabaudica*, Ger. *Aconitum Pardalianches primum, seu Thora major*, C. B. *Pardalianches, seu Thora major*, Park. LEOPARD-BANE.

It grows on the Mountains of *Switzerland*, and the Herb is endued with a caustic Quality.

The Virtues of this Plant are either of the laudable and salutary, or of the hurtful and pernicious Kind. The first, second, sixth, thirteenth, and sixteenth Species are principally kept in the Shops. Its Roots and small Bulbs, bruised and applied to the Skin, excite Pain, Redness, Inflammation, a Gangrene, and an acrimonious State of the Humours: For this Reason they are of an escharotic, caustic Quality, and cure Diseases in which the nervous System is to be roused and shaken; such as Pains of the Bones, Epilepsies, Convulsions, Spasms, hysteric Passions, fixed Pains of the Periosteum, Gouts, old Ulcers, and ischiadic Pains. They exulcerate and burn into Crust the Skin and Panniculus adiposus; and if they are left in open Wounds, they excite Fistulas. It is also customary among Soldiers and common People, to gather, wash, and bruise the Roots of the first, second, and third Species, and apply them to the Soles of the Feet, or between the Fingers, by which Means they successfully cure intermitting Fevers; but if they are too acrid, they burn the Skin.

This Herb is, by many, called *Scelerata Herba*, because with its Roots and Bulbs the Beggars raise unseemly Ulcers on their Children, in order to excite the greater Compassion. The Herb put up the Nostrils excites a violent Sneezing. Warts are eradicated by rubbing them with this Plant; and the Ancients applied the Leaves of the *Ranunculus* for the Cure of a Leprosy. This Plant is poisonous when used internally, but externally it cures the Itch in Children.

It is by some called *Apium Risus*; hence *Giulandinus*, that skilful Botanist, thought that it was the *Apiastrum* of *Pliny*, which *Dioscorides* calls *Sardonia*. This is so acrimonious, that if it is applied to the Tongue, it immediately inflames it, and produces a Gangrene in it.

It is also called *Herba Strumea*, because it resolves and discusses scrophulous and strumous Swellings; *Pes Corvinus*, because the Leaves of some Species of it resemble Crows Feet; and *Ranunculus*, from *Rana*, because it grows in moist Places. *Hist. Plant. Ajrique. Bauh.*

Besides the foregoing Species of *Ranunculus*, *Dale* mentions the following:

Ranunculus montanus, Offic. *Ranunculus montanus maximus albus*, Park. Theat. 334. *Ranunculus montanus Aconiti folio albus flore majore*, C. B. P. 182. Tourn. Inſt. 290. *Ranunculus Aconiti folio*, Ger. Emac. 954. *Ranunculus flore albo Alpinus major*, J. B. 3. 861. Raii Hiſt. 1. 589. MOUNTAIN CROWFOOT WITH A WHITE FLOWER.

It grows on woody Hills, and flowers in *May* and *June*; and agrees in Virtues with the other Species of *Ranunculus*.

RAPA.

The Characters are;

The Pod ends in a fungous kind of Horn, and the Root is carnous and tuberous.

Boerhaave mentions nine Species of *Rapa*, which are;

1. Rapa; ſativa; rotunda; radice candida. *C. B. P.* 89. *Raii Hiſt.* 1. 800. *Synop.* 3. 294. *Tourn. Inſt.* 228. *Boerh. Ind. A.* 2. 12. *Rapa*, Offic. *Rapum hortenſe*, Park. Parad. 508. *Rapum majus*, Ger. 177. Emac. 232. *Rapum ſativum rotundum*, J. B. 2. 838. TURNEPS.

This is a Root ſo well known, that it would be needleſs to ſay more than that it is round, and ſomewhat flat, of a white Colour, but ſomewhat reddiſh on the Outſide. The Leaves are large, rough, and very much cut in, being round and broad at the End, and lying on the Ground. In the Spring it ſends forth branched Stalks, clothed with ſmaller, but ſmooth and undivided Leaves, and long Spikes of four-leaved bright yellow Flowers; which are ſucceeded by long, ſlender Pods, containing round black Seed. It is ſown in the Fields and Gardens, and flowers in *April*.

Turneps are much eaten with all Sorts of Fleſh, in the Winter Seaſon eſpecially, and are a wholeſome and nouriſhing Root, tho' ſomewhat windy; and are more uſed in the Kitchin than in the Apothecaries Shops. Some commend a Syrup made with Slices of Turneps and brown Sugar-candy, Stratum ſuper Stratum, baked in an Oven, as a good Pectoral, and helpful for Coughs and Conſumptions. *Miller's Bot. Off.*

Turneps are ſown in a moiſt Soil with Cabbage, and are much uſed for Food. They are of two Kinds, Male and Female, which differ little from one another; only the Male is uſually round, about the Bigneſs of a Child's Head, and much extended in Breadth; the Female is oblong, and moſt eſteemed. Such as are tender, plump, of a good Taſte, and grow in a fat and moiſt Soil, are the beſt. They ſometimes grow to a prodigious Bigneſs. *Pliny* and *Tragus* ſay, they had ſeen ſome of the Males that weighed forty Pounds; and *Amatus* reports that he had ſeen ſome that weighed above fifty and ſixty Pounds. Some of the Females have been known to have weighed thirty.

They contain much Oil, and a little eſſential Salt; and are very nouriſhing, ſoftening, and provoke Urine, having an oily balſamic Juice, proper to correct the ſharp Salts of the Humours, and to recruit the ſolid Parts. The Decoction of them, ſtrained and ſweetened with Sugar, is uſed to allay the ſharp Humours of the Breaſt, and remove Hoarſeneſs, and muſt be taken juſt before going to Bed.

They are hard of Digeſtion, windy, and ſometimes cauſe Obſtructions; becauſe their Subſtance being very compact and cloſe, they continue a long Time in the Stomach before they are waſted, ferment there, and eaſily ſtop in the ſmall Channels or Pipes through which they paſs. They agree at all times with young bilious Perſons, and thoſe whoſe Humours are ſharp and thin, provided, however, they have a good Stomach. The Seed is reckoned good againſt Poiſon, and to kill the Worms. *Lemery of Foods.*

2. Rapa; ſativa; rotunda; radice obſoletè nigricante. *C. B. P.* 90.

3. Rapa; ſativa; rotunda; radice ſuprà Terram viridi.

4. Rapa; ſativa; rotunda; radice foris & intus flaveſcente. *C. B. P.* 90.

5. Rapa; ſativa; rotunda; radice foris & intus pallide luteſcente.

6. Rapa; radice compreſſâ, candidâ.

7. Rapa; radice oblongâ; ſeu fœmina. *C. B. P.* 90.

8. Rapa; radice oblongâ; ſeu fœmina; radice obſoletè nigra.

9. Rapa; radice oblonga; ſeu fœmina; major. *Boerh. Ind. Alt. Plant.*

This Plant agrees in Virtues with the *Raphanus*; the Cortex, or Bark, of the Root has an acrimonious Taſte; but the Juice of the interior medullary Subſtance has a Honey-like Savour. The Root boiled and decorticated is an excellent Antiſcorbutic, and is thought to have a demulcent Virtue. The expreſſed Juice of the Root, taken in a good State of Maturity, and before it bears Seed, being boiled and clarified, with an Addition of Honey, making a third Part of the whole, is an incomparable Medicine for Ulcers in the Mouth, and to deterge Aphthæ; and being drank, is an excellent Remedy for an inveterate Cough. The Seed, heated and preſſed, yields an Oil of Uſe on all Occaſions. The Bulb roaſted under the Embers, is an Anodyne in Inflammations of the Ears. The ſame boiled in Butter, and made into a Cataplaſm, is very good to mollify Tumors. *Nicander* writes, that the *Rapa* is a very proper Ingredient in alexipharmic and theriacal Compoſitions; it ſerves alſo for Food and Sauce. *Galen* ſays, that it is a very good Aliment, but flatulent: It loſes, however, its Flatulency in boiling or roaſting; but as it is always deprived of its Cortex, it muſt ſtill retain ſome Flatulency. The following Remarks on *Rapa* are worth Obſervation: The leſſer the Bulb, and the more ſandy the Soil in which it grows, the more acrimonious is its Taſte; the Rind of the Bulb is always bitter, which is a Proof that the Plant is antiſcorbutic. The Juice is highly commended by modern Phyſicians. They preſs the whole Body of the Bulb into a Flour, and ſo expreſs the Juice, which is acrimonious; then with an Addition of Honey they make of it a Gargariſm, which is a good Remedy in the Quinſey, and a Peripneumony. The eighth Species becomes the more acrimonious for being pierced by Worms, becauſe the aqueous Juice is evacuated by the Wounds. That there is a conſiderable Flatulency in crude Turneps, is demonſtrated by Mr. *Boyle*, who found, that by putting them with their Rinds pared off in an exhauſted Receiver, and ſuffering them to continue therein for four and twenty Hours, they had in that Space of Time generated five Atmoſpheres; that is, rendered the Air within the Receiver of five Times the Weight of that without it. The ſame Experiment will hold good of Radiſhes; whence it appears, that there is in theſe Plants an antiſcorbutic and very deterſive Quality. *Hiſt. Plant. Aſcript. Boerhaave.*

Beſides the foregoing Species of *Rapa*, *Dale* mentions the following:

Rapa Syveſtris, Offic. C. B. P. 90. Raii Hiſt. 1. 800. *Rapum Sylveſtre*, Ger. 179. Emac. 233. *Rapum ſylveſtre non bulboſum*, Park. Theat. 861. *Rapum ſylveſtre Matthioli*, J. B. 2. 841. WILD TURNEP.

It grows in Fields, and flowers in the Summer. The Root, as *Dioſcorides* ſays, is an Ingredient in *Smegmata*, or deterſive Medicines, compoſed of the Flour of Lupines, Wheat, Darnel, or Vetches, for clearing the Skin of the Face, and of the Body. *Dioſcorides*, L. 2. C. 135.

RAPAX. A Name for Amber.

RAPHANINUM OLEUM. Oil drawn from the Seeds of the Radiſh. *Dioſcorides* recommends it for cutaneous Diſorders. L. 1. C. 45.

RAPHANISTRUM.

The Characters are;

The Pod is full of Joints, like a faſciated or filleted Column, and full of roundiſh Seeds, incloſed in each Joint.

Boerhaave mentions three Species of *Raphaniſtrum*, which are;

1. Raphaniſtrum; ſegetum; flore luteo, vel pallido. *T.* 230. *Bapiſtrum, flore luteo, ſiliqua glabra articulata.* Raii Hiſt. 805.

2. Raphaniſtrum; arvenſe; flore albo. *T.* 230. *Rapiſtrum, flore albo Erucæ foliis.* Lob. Ic. 199. *Lampſana.* Cæſalp. 355.

3. Raphaniſtrum; flore albo ſtriato; ſiliquâ articulatâ, ſtriatâ, minore. See ARMORACIA. *Boerh. Ind. Alt. Plant.*

It is called *Raphaniſtrum* from *Raphanus*, becauſe its Root reſembles that of the *Raphanus minor*. Its Virtues are the ſame with thoſe of the *Raphanus*. *Hiſt. Plant. Aſcript. Boerhaave.*

Raphaniſtrum is alſo a Name for ſeveral Sorts of *Rapiſtrum*, which ſee.

Raphaniſtrum diſpermum. A Name for the *Erucago*; *ſegetum.*

Raphaniſtrum, monoſpermum. A Name for the *Myagrum monoſpermum*; *latifolium.*

RAPHANUS.

The Characters are;

The Pod is like a Horn, thick, ſpungy, divided by a thin Membrane into two Capſules, or Cells, containing round Seeds.

Boerhaave mentions five Species of *Raphanus*, which are;

1. Raphanus; major; orbicularis; vel rotundus. *C. B. P.* 96.

2. Raphanus; major; orbicularis; floribus candidis. *C. B. P.* 96.

3. Raphanus; niger; major; rotundus. *M. H.* 3. 265.

4. Raphanus; minor; oblongus. *C. B. P.* 96. *Tourn. Inſt.* 229. *Boerh. Ind. A.* 2. 11. *Raphanus hortenſis, Radicula*, Offic. *Raphanus*, J. B. 2. 846. *Raphanus ſativus*, Ger. 183. Emac. 287. Raii Hiſt. 804. Synop. 3. 296. *Raphanus vulgaris*, Park. Theat. 861. Parad. 507. RADISH.

This Root is very well known to every one, to be long, ſingle, and white; and covered with a thin reddiſh Skin on

the upper Part; the Leaves are large, rough and hairy, pretty much cut in on the Edges; the Stalks grow to three or four Foot high, much branched, having ſeveral four-leaved white Flowers, with a reddiſh Spot on each Leaf; which are ſucceeded by pretty large, light, ſpungy Seed-veſſels, including oval, reddiſh, brown Seed, as big again as Rape Seed. It is planted in Gardens, and flowers in *May*.

Radiſhes are opening, attenuating, and antiſcorbutic, and are much eaten in the Spring; but afford little Nouriſhment, and are very windy. They provoke Urine, and are good for the Stone and Gravel. They are but ſeldom uſed in the Shops. *Miller*'s *Bot. Off.*

The Parts uſeful in Medicine are the Root and Seed, which are principally employed in waſting and expelling the Stone; in provoking Urine and the Menſes; and in opening Obſtructions of the Liver and Spleen. *Dale.*

The *Raphanus* has the Virtues of the *Cochlearia*; the Root is eſculent, expels Phlegm from the Inteſtines, and is a Carminative. The Flowers, Leaves, Seeds and Roots are antiſcorbutic; for which Reaſon they are much in requeſt, and are proper for phlegmatic Conſtitutions. The expreſſed Juice of the Roots and Seeds, taken in the Morning with Honey, is a very wholeſome Medicine, eſpecially if a Draught of Whey be taken afterwards; for it cleanſes the Stomach, Kidneys, and Lungs, and is good againſt an inveterate Cough and Hoarſeneſs, proceeding from Phlegm; but it is not proper in a Cough proceeding from an Inflammation, nor for thoſe who ſpit Blood. The Leaves are uſed among other Greens. The Root contains much of an aqueous and acrimonious Subſtance; and the drier it is, the more acrid it becomes; but its Acrimony is loſt in boiling. Its Aquoſity renders it flatulent, on which Account it is ſaid not to be good in hypochondriacal Diſorders: The daily Uſe of the Root, however, is of ſufficient Efficacy to cure a great Dropſy in the Beginning; and it is of excellent Service in the Scurvy. It is alſo aperitive, inciding, and good for the Stone, the nephritic Colic, a Retention of Urine and the Menſes, and in the Jaundice. The Seeds are opening; but taken inwardly by themſelves, they excite a Nauſea. *Hiſt. Plant. Aſcript. Boerhaave.*

5. Raphanus; major; oblongus. *Boerh. Ind. Alt. Plant.*

Raphanus aquaticus. A Name for the *Siſymbrium*; *aquaticum*; *Raphani folio*; *ſiliqua breviore*; and for the *Siſymbrium*; *aquaticum*; *foliis in profundas lacinias diviſis*; *ſiliqua breviori.*

Raphanus ruſticanus. A Name for the *Cochlearia*; *folio cubitali.*

RAPHE. A Suture.

RAPISTRUM.

The Characters are;

The Shell is almoſt globular, and conſiſts of one Capſule, which generally contains no more than one Seed.

Boerhaave mentions ſix Species of *Rapiſtrum*, which are;

1. Rapiſtrum; Orientale; Acanthi folio. *T. Cor.* 14.

2. Rapiſtrum; monoſpermum. *T.* 210. *C. B. P.* 45. *Prodr.* 37. *J. B.* 845. *Raphaniſtrum*, *monoſpermum*, *capſulis ſtriatis*, *tenuitus*, *oblongiuſculis.* M. H. 2. 267.

3. Rapiſtrum; maximum; rotundifolium; monoſpermum. *Corn.* 147. *Raphaniſtrum monoſpermum*, *maximum*, *rotundifolium*; *capſulâ rotundâ*, *glabra.* M. H. 2. 265.

4. Rapiſtrum; arvenſe; folio auriculato, acuto. *T.* 211. *Myagro ſimilis*, *ſiliquâ rotundâ.* C. B. P. 109. Prodr. 52. *Raphaniſtrum*, *ſiliquâ minore*, *rotundâ*, *rugoſâ*, *aſperâ.* M. H. 2. 267.

5. Rapiſtrum; Orientale; folio Raphani; capſulis rugoſis *Niſſole.*

6. Rapiſtrum; Orientale; Dentis Leonis folio; flore albo. *T. Cor.* 14. *Boerh. Ind. Alt. Plant.*

It is called *Rapiſtrum* from *Rapa*, becauſe its Leaves reſemble thoſe of the *Rapa.* All the Species are antiſcorbutic, and have an acrimonious Taſte, mix'd with a Savour of Garlick, whence they contain ſomething of a heating Quality; however, they are not much commended, and are but of little Uſe in Medicine. *Hiſt. Plant. Aſcript. Boerh.*

Rapiſtrum, is alſo a Name for the *Sinapi*; *arvenſe*; *præcox*; *ſemine nigro.* And for the *Sinapi*; *arvenſe*; *præcox*; *ſemine nigro*; *foliis integris.*

Rapiſtrum flore albo. A Name for the *Raphaniſtrum*; *arvenſe*; *flore albo.*

Rapiſtrum flore luteo. A Name for the *Raphaniſtrum*; *ſegetum*; *flore luteo*, *vel pallido.*

Rapiſtrum Italicum. A Name for the *Eryſimum*; *anguſti folium*; *majus.*

RAPUM. See RAPA.

RAPUNCULUS.

The Characters are;

It has all the Appearance of the *Campanula*, except in that the Flower is monopetalous, quinquefid, ſtellated, and furniſhed with a corniculated Piſtil.

Boerhaave mentions two Species of *Rapunculus*; the firſt of which has its Flowers collected into a Head, and is known by the Name,

Rapunculus; Scabioſæ capitulo. *C. B. P.* 92. *Scabioſa*, *globularis*, *quam ovinam vocant.* J. B. 3. 25. 12. *Rapuntium montanum*, *capitatum*, *leptophyllum.* Col. 1. 227.

The ſecond Species, which is diſtinguiſhed by having its Flowers diſpoſed in the Figure of an Umbella, is called,

Rapunculus; valerianoides; cæruleus; umbellatus. *Flor.* 2. 113. *Cervicaria*, *valerianoides*, *cærulea.* C. B. P. 95. *Trachelium*, *umbelliferum*, *cæruleum.* Ponæ. *Valerianthemum.* Hoffman. Delic. *Boerh. Ind. Alt. Plant.*

It is called *Rapunculus*, becauſe its Root reſembles that of the *Rapum.* But I find no Virtues aſcribed to it.

Rapunculus is alſo a Name for ſeveral Sorts of CAMPANULA.

RAPUNTIUM.

The Characters are;

In Leaves, Fruit, and outward Appearance, it reſembles the *Campanula.* The Flower is monopetalous, divided into Parts, ſhaped like a Tongue, and incloſed in a Sheath.

Boerhaave mentions four Species of *Rapuntium*, which are;

1. Rapuntium; maximum; coccineo; ſpicato flore. *Col. in Rech.*

2. Rapuntium; Americanum; flore dilutè cæruleo. *A. R. P.* 105. *Rapunculus*, *Galeatus*, *Virginianus*, *flore violaceo*, *majore.* M. H. 2. 466.

3. Rapuntium; Americanum; Virgæ aureæ foliis; parvo flore cæruleo. *T.* 163.

4. Rapuntium; Africanum; minus; anguſtifolium; flore violaceo. *T.* 163. *Campanula*, *minor*, *Africana*, *erini facie*, *flore violaceo*, *caulibus procumbentibus.* H. L. *Boerh. Ind. Alt. Plant.*

This Plant is not received in Medicine. The firſt Species ſerves to feed Sheep, and bears a very beautiful Flower, which, for Colour and Luſtre, ſurpaſſes all others; for which reaſon it is called *Flos cardinalis*, the Cardinal Flower. *Hiſt. Plant. aſcript. Boerhaave.*

RAREFACIENTIA. Medicines which rarify the Blood.

RASA. The ſame as RESINA.

RASA, or RASTIS. Tin.

RASAKETI, RUSATAGI, or RUSANGI. Burnt Copper. *Rulandus.*

RASCATIO. Exſcreation, or Hawking.

RASCETA, or RASETTA. The Wriſt; or Ankle. The Word is Arabick.

RASILIS ÆRUGO. See ÆRUGO.

RASORIUM. A Raſpatory, or Lenticular. See *Table* 28. *Fig.* 3, 4, and 5.

RASPATORIUM. The ſame as RASORIUM.

RASTETA. The ſame as RASCETA. *Paracelſus.*

RASTOL, or RASOES. Copper. *Rulandus.*

RASTUL. Salt. *Rulandus.*

RASURA. A Shaving, or Raſping. It is alſo uſed to expreſs a kind of Corroſion by acrid Humours. *Raſuræ*, are Shavings, or Raſpings.

RATIONIS OS. The OS SINCIPITIS. *Blancard.*

RATIS. *Marcellus Empiricus* informs us, that this is the French Name for the *Filicula*, (Polypody) which frequently grows on the Beech.

RAUCEDO. Hoarſeneſs.

RAVED. Rhubarb.

RAXACH. Gum Ammoniac.

REALGAR. *Realgar*, or *Liſagallum*, of the Shops; Σανδαράχη of the *Greeks*; *Realgar*, *Leſegal*, and *Zarnich Ahmer*, of the *Arabians*; called by us Red Orpiment; is an arſenical Juice of the ſame Nature with Orpiment, differing from it only in Colour. It is of two Kinds, native and factitious: The native *Realgar* is dug out of the ſame Mines with Orpiment, reſembling Cinnabar in Colour, and ſmelling like Sulphur and Garlick when burnt, and made up in ſolid brittle Glebes. The factitious Kind is made of Orpiment, melted and boiled for ſome time in ſubliming Veſſels, by which the yellow Flowers are raiſed to the upper Part of the Veſſels, and the Maſs remaining at the Bottom, being condenſed by Cold, becomes of a red Colour, like Cinnabar, and is called *Realgar*; which, if it be expoſed to the free Air for a long Time, becomes covered with a ſaline Efflorescence. This *Realgar* is not to be confounded with the factitious red Arſenic.

Realgar is brought from *China*, in different Figures; ſome of which reſemble the Figures of little Men, called Pagods; and I am of opinion that it is not cut into theſe Figures, but caſt in Moulds.

Realgar is no leſs poiſonous than Orpiment. According to *Dioſcorides*, Sandaracha has a ſeptic and corroding Virtue; but it is wonderful that he ſhould recommend the Uſe of it, not only in Fumigations for Coughs of long ſtanding, but alſo.

alſo taken inwardly, mixed with Reſin for Aſthmas; with Honey for a Hoarſeneſs, or a ſpitting up of a purulent Matter. Even *Hippocrates*, in a Suffocation of the Uterus, accompanied with a Cough, orders the Weight of an Obolus, or about twelve Grains of Sandaracha, mixed with the ſame Quantity of unprepared Sulphur, and three or four blanch'd Almonds, to be taken in ſweet or perfumed Wine. The *Indians* commonly drink Wine or Water out of arſenical Cups, for various Diſeaſes, as a ſovereign Remedy; though among us, this Practice has been found to be attended with very bad Conſequences. It muſt be owned, therefore, that the Bodies of Men in hot Countries are different from ours. As inſenſible Perſpiration is there more copious, their ſolid Fibres are drier, and more unfit for Motion; and, for that reaſon, require more ſtrongly irritating and ſtimulating Medicines, to make theſe Fibres contract as they ought. Likewiſe, as the Fluids in their Bodies are thicker and more viſcid than in ours, by the Evaporation of the more fluid Parts of them, they cannot be attenuated but by ſtrong and very acid Medicines; and therefore what is a certain Poiſon to us, is to them an efficacious Remedy; as the cathartic Medicines which we uſe, have hardly any Effect on them, except they be given in three times the common Quantity, as has been often obſerved by Phyſicians. In our Climate, therefore, we ought to abſtain from the inward Uſe of theſe Medicines, however prepared, corrected or mitigated; becauſe they ſtill retain ſome Part of their deleterious Qualities, and prove fatal to Perſons whoſe Viſcera are tender. Neither is the external Uſe of them altogether ſafe; for *Fernelius* relates, that by applying a large Quantity of Arſenic to a cancer'd Breaſt, the Patient was carried off in ſix Days. About three Hours after the Medicine was applied, ſhe was ſeized with a Shivering, Vomiting, Pain in her Head, and frequent Fainting. Her Pulſe was weak, and as the Symptoms increaſed by Degrees, ſhe began to be cold in the Extremities of her Body, and then her Face and other Parts ſwelling beyond Meaſure, ſhe ſoon died. From this Obſervation, *Fernelius* takes occaſion to caution Phyſicians againſt the external Uſe of arſenical Medicines, except in ſmall Quantities, and to Parts at a great Diſtance from the Heart and Brain; though, in the Opinion of many very great Phyſicians, they are thought to be very powerful and efficacious Remedies in cachetic, phagedænic, and carcinomatous Ulcers.

The Correction of *Realgar*, firſt propoſed by *Helmont*, and afterwards publiſhed by *Dallicot*, firſt Phyſician to the Duke of *Lorrain*, which has been found ſucceſsful in many Caſes, is this:

Put any Quantity of *Realgar*, finely powdered, into a Glaſs Matraſs, and pour upon it as much of a ſtrong Lixivium of Tartar and Nitre, as will ſwim four Fingers Breadth above the *Realgar*. Digeſt them in a Sand-heat for twenty-four Hours, ſhaking the Matraſs very often. Then pouring off, and preſerving the Tincture, pour new Lixivium upon the Powder, and repeat the whole Operation, till almoſt all the *Realgar* is diſſolved, ſome indiſſoluble metallic Parts only remaining. Afterwards mix all the Tinctures together, paſs them through Cap-Paper, and pour, at ſeveral times, as much Vinegar of Lead to the ſtrained Liquor, as will precipitate all that can be ſeparated from it. Then pouring off the clear Liquor from the precipitate by Inclination, let the Powder be waſhed with warm Water till it become almoſt inſipid; and when it is well dried, burn a ſufficient Quantity of rectified Spirit of Wine upon it; and then calcine it with the Tincture of Opium extracted with Spirit of Wine. This Powder, ſo prepared, is a gentle Eſcharotic, of great Service in cancerous Swellings. *Geoffroy.*

REBIS. A Word in *Paracelſus*, importing the Excrements of the Belly. It is alſo a Name for his celebrated Medicine, called *Azoth.*

REBISOLA. A ſecret Medicine prepared of Urine, for the Jaundice. *Rulandus.*

REBOLEA. Mummy. *Rulandus.*

REBONA. Burnt Dung. Mummy. *Rulandus.*

REBUS. The ultimate Matter of all Things.

RECEPTACULUM. A Receptacle. In Chymiſtry, a Receiver. In Anatomy, the *Receptaculum Chyli*, or Receptacle of the Chyle, is the Part to which the Lacteals convey the Chyle, in order to be tranſmitted to the Blood.

RECEPTARII MEDICI. Phyſicians who collect or write vaſt Loads of Preſcriptions, to the great Detriment of their Patients, are thus called by way of Reproach.

RECEPTUM. A barbarous Word, importing a Preſcription.

RECESSUS. This Word is ſometimes uſed to expreſs an Abſceſs, or Apoſtemation.

RECHA. Marble. *Rulandus.*

RECIDIVA. A Relapſe. After a Diſeaſe is once cured, the Patient often ſuffers a Relapſe; a Diſpoſition to which may be known by the following Signs: If, after the Diſeaſe has left the Patient, a Weakneſs ſtill remains; if there be no Appetite, nor Digeſtion, but much Nauſeating, accompanied with nidorous or acid Eructations: With equal Certainty is a Relapſe portended, if the forementioned Indications be attended with a fetid Breath, a vehement Thirſt, and much Watching; if the Præcordia, and Parts adjacent, are tumified; and if the Face be inflated, eſpecially towards the upper Eye-lid. All theſe forementioned Symptoms indicate a Return of the Diſorder with the greater Certainty, in proportion as they appear more evidently at thoſe Times, in which there is uſually an Exacerbation of the Diſeaſe.

The Kind, or Nature of the Diſtemper will alſo furniſh ſomething material for predicting a Relapſe. Thoſe Fevers which are attended with an Inflammation, are very ſubject to return upon the Patient; for though the Fever goes off, it leaves behind it ſomething of a Heat and Æſtuation in the Viſcera. Of the ſame Diſpoſition are the Epilepſy, Dimneſs, the Hernicrania, an obſtinate Pain of the Head, a Catarrh, Aſthma, Pains in the Kidneys, the Colic, Gout, and other Diſorders of that Nature. The Seaſon moſt favourable to Relapſes is the Autumn; and every Relapſe is the leſs dangerous for being occaſioned only by bad Diet, and not from ſome corrupt Reliques of the former Diſeaſe. The ſooner a Diſorder returns, and the more impaired the Strength of the Patient, the worſe is the Relapſe; and whatever Diſeaſe ceaſes all on a ſudden, and for no manifeſt Reaſon, ſeldom fails to return. *Lommius, Med. Obſ.*

RECIPE. A Word always uſed in the Beginning of Preſcriptions, importing, Take. It is generally wrote ℞, or 2.

RECIPIENS. In Chymiſtry is a Receiver. In Pathology, *Recipiens* is the Recipient, or Subject which receives a Diſeaſe.

RECIPROCATIO. The ſame as ANTAPODOSIS.

RECLUSIO. The ſame as ANASTOMOSIS.

RECOCTA. A Sort of Cheeſe made of Whey or Buttermilk. *Caſtellus.*

RECOLATIO. A repeated Percolation, or Straining.

RECORDATIO. The ſame as ANAMNESIS.

RECORPORATIO. See METASYNCRISIS.

RECREATIO. The ſame as ANALEPSIS.

RECREMENTUM. A Recrement. It is much the ſame as Excrement; except that with reſpect to Metals, their *Scoriæ* are called Recrements.

RECRUDESCENTIA. This is uſed by ſome Authors to expreſs a Relapſe.

RECTIFICATIO. Rectification; that is, a Depuration, or Exaltation of the Subſtances produced by Diſtillations, by repeating the Diſtillation a ſufficient Number of Times.

RECTUM INTESTINUM. See COELIA.

RECTUS. This is a Name for ſeveral Muſcles. Thus there is the *Rectus Abdominis.* See ABDOMEN. There are ſeveral Muſcles which aſſiſt in moving the Head, that are called *Recti.*

RECTUS MAJOR.

This is a ſmall, flat, ſhort Muſcle, broad at the upper Part, and narrow at the lower; and though it is called Rectus, it is ſituated obliquely between the Occiput and ſecond Vertebra of the Neck.

It is fixed below to one Branch of the bifurcated Spine of the ſecond Vertebra of the Neck, at a Tuberoſity, which is often found at the upper Part of that Branch. Thence it aſcends a little obliquely outward, and is inſerted in the poſterior Part of the inferior tranſverſe Line of the Os Occipitis, at a ſmall Diſtance from the Criſta, being a little covered by the Obliquus ſuperior.

RECTUS MINOR.

This Muſcle is like the former, and it has alſo a ſmall Inſertion below, in the poſterior Eminence of the firſt Vertebra. From thence it aſcends laterally, and is inſerted immediately under the poſterior Part of the inferior tranſverſe Line of the Os Occipitis, in a ſuperficial Foſſula, on one Side of the Criſta Occipitalis.

The Recti majores and minores poſtici, and Obliqui Superiores, turn the Head a little Backward, on the firſt Vertebra of the Neck; and they can neither act otherwiſe nor ſeparately; the Recti Majores contribute moſt to this Motion; and the Minores ſeem likewiſe to hinder the articular Membranes from being pinched between the Bones in great Motions.

RECTUS ANTICUS LONGUS.

This Muſcle is in ſome Meaſure of a pyramidal Figure, lying along the anterior and lateral Parts of the Vertebræ of the Neck, all the Way up to the Baſis Cranii.

It is fixed to the anterior Parts of the tranſverſe Apophyſes of the third, fourth, fifth and ſixth Vertebræ in a digitated Manner. From thence it runs up obliquely inward towards

the lateral Parts of the Bodies of the Vertebræ, paſſes on the Foreſide of the firſt and ſecond, without being inſerted in them; and approaching gradually towards the ſame Muſcle on the other Side, it is inſerted near it, in the Forepart of the lower Side of the Apophyſis Baſilaris, or great Apophyſis of the Os Occipitis.

RECTUS ANTICUS BREVIS.

This is a ſmall flat Muſcle, about the Breadth of one Finger, ſituated laterally on the anterior Part of the Body of the firſt Vertebra. It is fixed below to the Baſis or Root of the tranſverſe Apophyſis of that Vertebra, near the anterior Eminence.

From thence it runs obliquely upward and inward to a tranſverſe Impreſſion in the lower Side of the Apophyſis Baſilaris of the Occipital Bone, immediately before the Condyle on the ſame Side, being covered by the *Rectus Anticus Longus*.

The Recti Majores and Minores Antici, and the two Tranſverſales Antici move the Head forward on the firſt Vertebra; and the Recti Minores and Tranſverſales Breves, likewiſe defend the Capſular Ligaments. *Winſlow's Anatomy.*

RECURSIO. The ſame as PALINDROMIA. Or the Return of a Paroxyſm, or Fit.

RECUTITI. The ſame as APELLÆ.

REDIVIVUS. Reviv'd. This, in Chemiſtry, is frequently apply'd to Metals, which, after having been diſguiſed, and concealed in a Form foreign to their reſpective Natures, are reviv'd, and reſtor'd to that which is natural to them.

REDUC, or REDUX. A Flux, or Powder, by which calcin'd Metals, or Minerals, are reduced to a Reguline Form. *Rulandus.*

METHODS OF PREPARING FLUXES.

We took four Ounces of red Lead, an Ounce of white Sand in Powder, and two Ounces of dry decrepitated Salt, and mixed them all well together in a Mortar; then putting the Mixture into a clean Heſſian Crucible, fitted with a Cover, we fuſed the Matter in a Wind Furnace for a Quarter of an Hour; when taking it out, and letting it cool, we afterwards broke the Crucible, and found the Salt at Top, and a pure Glaſs of Lead at the Bottom. This Glaſs we carefully ſeparated, and kept a-part as a powerful Flux.

The Salt is of no other Uſe in this Operation, than to ſerve as a Flux to the Sand, and make it more readily unite with the Red-Lead; ſo as to form a Glaſs without any great Violence of Fire, or the Neceſſity of being long detained therein. So that by this Means a Glaſs of Lead may be readily prepared for the Purpoſe of artificial Gems, or other Uſes.

This Glaſs of Lead is a Flux extremely uſeful in the Buſineſs of Aſſaying; and when kept long in Fuſion, paſſes thro' the Pores of any common Crucible, almoſt like Water thro' a Sieve; ſo as, upon the Teſt, readily to vitrify, or carry off all Sorts of Metalline and Mineral Matter, except Gold and Silver: On which Property, therefore, the Art of Cupelling depends.

Fluxes ſeem reducible to two general Kinds; the Vitreous and the Saline. By the Vitreous we underſtand all thoſe which either have of themſelves, or readily aſſume a glaſſy Form in the Fire; among the Principle whereof we reckon the Glaſs of Lead, the Glaſs of Antimony, and Borax.

By the Saline Kind of Fluxes, we underſtand all thoſe that are compoſed of Salts, whether Tartar, Nitre, fixed Alkali, or the like. Among the principal of this Kind, we reckon the black Flux, Sandiver, Kelp and the like. The vitreous Kind ſeem more immediately deſtined to act upon the ſtony or vitreſcible Matter, wherewith ſtubborn Ores are frequently mixed; and the Saline Kind, to act more immediately upon the Ore itſelf, for the due Excluſion or Separation of the Metal.

The more kindly Ores require no Flux to make them run thin, or to afford all the Metal they contain. And ſometimes Ores are ſo kindly as to contain their own Fluxes within themſelves. Thus we have met with Copper Ores, which being barely ground to Powder, and melted, without any Addition, in a common Wind-furnace, have yielded as much, or even more pure Metal at the firſt Operation, than we could obtain from them by Means of the uſual Fluxes. Whence we ſee that artificial Fluxes are not always neceſſary; or that the principal Uſe of them is for the ſtubborn and leſs tractable Ores. Theſe are ſometimes ſo exceedingly hard to fuſe, and reduce to a metalline Form, that it requires the utmoſt Power of Art to treat them advantageouſly in the larger Way of Buſineſs, where no conſiderable Expence can uſually be allowed for Fluxes. On this Account it is, that many Mines remain unwrought, as being intractable, without great Charges. Whence the Improvement of the Buſineſs of Fluxes, ſo as to render them cheap and effectual, might greatly contribute to the Improvement of Metallurgy.

We would, therefore, recommend to farther Enquiry what Matter it is, in the more ſoft and tractable Ores, which renders them ſo fuſible, and eaſy to part from their Metal. Certain

Experiments we have made with this View ſeem to ſhew, that in Copper Ores it is a Kind of bituminous Subſtance, capable of melting by a ſtrong Heat into a ſoft black Kind of Glaſs.

Some of the moſt powerful and cheap ſimple Fluxes hitherto known, are dried Wine-Lees, dried Cow-dung and Horſe-dung, dried River-mud, Fuller's Earth, Iron Filings, common Salt Glaſs, Kelp, or Pot-aſh, Sandiver and the like, which may be uſed in the larger Works; as Nitre, Tartar, Borax, Sal-ammoniac, Mercury-ſublimate, and the like, may in the ſmaller, or for the making of Aſſays.

As for compound Fluxes, they are numerous, almoſt every Operator having his favourite Flux. And certainly ſome Fluxes are better adapted than others to certain Ores. But perhaps a few general Ones might be fixed upon, which ſhould ſerve inſtead of all thoſe hitherto commonly known and uſed. We will here recommend three, which are powerful, almoſt general, and not expenſive.

1. Take of Nitre, prepared by long boiling it in Lime-Water, of Sea Salt, melted in the Fire, Sandiver and dry Wine-Lees, each one Part; Glaſs of Lead three Parts; and powder'd Glaſs, eight Parts; mix them all well together. *This Flux added in an equal Weight, will fuſe a very ſtubborn Ore.*

2. For a ſtill ſtronger, Take equal Parts of white Tartar, common Salt and Nitre, prepared as above; calcine them to a white Powder, and mix therewith its own Weight of Glaſs of Lead; and of this Flux add two Parts to one of the ſtubborneſt Ore.

3. For a powerful Saline Flux, Take of the ſtrongeſt Soap-boilers Lees four Pounds, white Tartar and common Salt, melted in the Fire, each one Pound; boil them together with five Gallons of human Urine, to a dry Salt. This Flux is particularly proper where Sulphur and Cobalt abound, and render the Ore very refractory.

But the great Secret in making and adapting of Fluxes, is not only to ſeparate the Metal already ripened in the Ore, but even to mature and ripen the crude immature Part of the Ore in the Fire. Something of this Kind we apprehend may be effected; as having Reaſon to believe, that certain Fluxes will obtain a larger Yield of Metal from certain Ores, than other Fluxes in common Uſe, though eſteemed of the beſt, and though they are perhaps of the deareſt Kind. Thus clean Iron Filings will often do more than Borax. But as the Scales and Crocus, or Ruſt of Iron, have been commonly uſed, inſtead of pure and perfect Iron itſelf, for a Flux, few Operators appear acquainted with the Excellence of perfect Iron, employed for this Purpoſe: And many Advantages are now commonly reaped by a prudent mixing of one Ore with another of the ſame Denomination, and with the Slags or Recrements of Metals, in the Way of a Flux. *Shaw's Chemical Lectures.*

REDUCTIO, Reduction, in Chymiſtry, or Reſuſcitation; is the Reſtoration of a Metal, previouſly diſguiſed under the Form of a Calx, or Powder, or diſſolved in a Fluid, to the Form of a Metal.

REDUPLICATIO. The ſame as ANADIPLOSIS.

REDUVIA. A Whitlow; or a painful Crack at the Root of the Nails.

REFE. A Thread doubled and twiſted. It is the ſame as ACIA.

REFECTIO. The ſame as ANALEPSIS. *Fabricius ab Aquapendente.*

REFICIENTIA. The ſame as ANALEPTICA.

REFINATIO. Refination; that is, Depuration; a Term uſed with reſpect to Metals, and Sugar.

REFRIGERATIO. The ſame as CATAPSYXIS.

REFRIGERATORIUM. A Refrigeratory. This is a Veſſel filled with Water, thro' which the Worm paſſes in Diſtillations. The Uſe is to condenſe the Vapours, as they paſs thro' the Worm. *Vigani* takes Notice of another Sort of Refrigeratory, *Medull. Chym.* Tab. 2. Fig. 5. f. which conſiſts of a Veſſel filled with common Salt.

REGENERATIO. The ſame as PALINGENESIA.

REGIMEN. The Regulation of Diet, with a View of preſerving, or reſtoring Health. See DIÆTA. *Regimen* in Chymiſtry, is the Regulation of Fires.

REGINA. The ſame as BASILIS.

REGINA PRATI. A Name for the ULMARIA, Meadow-Sweet.

REGIO. A Region. In Anatomy this is applied to many Parts of the Body. Thus the Parts adjacent to the Navel are denominated the Umbilical Region; and the Parts about the *Hypochondria*, the Region of the Hypochondria, or Hypochondriacal Region.

REGIONALIS MORBUS. An Endemial Diſeaſe.

REGISTERES. Regiſters, in Chymical Furnaces, are Air Vents, by opening or cloſing of which the Operator regulates the Fire at Pleaſure: For when they are opened, the Heat of the Fire increaſes; when cloſed, it abates.

REGIUS MORBUS. This Name is, by different Authors, apply'd to ſeveral Diſtempers; but *Celſus*, the Standard for Medicinal *Latin*, means by this the Jaundice. Other Authors call the King's Evil, and others the Epilepſy, by this Name.

In Chymiſtry the *Aqua Regia* is a corroſive Water, which diſſolves Gold. See AQUA. And in Pharmacy *Regius* is a pompous Epithet, apply'd to many Medicines.

REGNUM. A Kingdom. The *Materia Medica* is divided into three Kingdoms; the Animal, Vegetable and Mineral.

REGULUS. The Metalline Part of Minerals, which remains in the Bottom of a Crucible, after the Separation of the *Scoriæ*, is called *Regulus*, or *Rex*.

REGULUS, is the Wren.

REJECTIO. A Caſting up of any Thing preternaturally by the Mouth, either by way of Expectoration or Vomit.

REL, or REBUS. Sour Milk. *Rulandus*.

RELAXANTIA. Relaxing Medicines.

RELAXATIO. Relaxation. See FIBRA.

RELOLLÆUM. A Term uſed by *Paracelſus*, and his Followers, which it is not eaſy to affix any Meaning to. *Helmont*, in his Treatiſe intitled *Natura contrariorum neſcia*, defines it an efficient Quality, not proceeding from the Ferments and Seeds of Things. *Relollæa*, ſays he, are of two Sorts; one *in Corpore proprio*, the other *in alieno*. Amongſt the *Relollæa propria* ſome are ſeparable, as Cold from Water and Air; others inſeparable, as Heat from the Light of the Sun, a Candle, or Fire. The *Relollæum alienum* periſhes, if not ſupported; and is, therefore, called tranſient; of this Sort is Heat in Water.

REMINISCENTIA. The ſame as ANAMNESIS.

REMISSIO. A Remiſſion of a Diſtemper is, when it is mitigated conſiderably, but does not entirely ceaſe; for when it does, it is then called an Intermiſſion.

REMORA. Offic. Aldrov. de Piſc. 335. Bellon. de Aquat. 405. Charlt. de Piſc. 6. Jonſ. de Piſc. 7. Raii Synop. Piſc. 71. *Iperuquiba & Piraquiba Braſilienſibus*, Marcg. 180. Raii Ichth. 119. *Echenei ſeu Remora*, Imperat. 684. THE SUCKING-FISH.

It is taken in the main Sea. As to its Virtues, it reſtrains Venery, prevents Abortion, and retains the Fætus till Maturity.

RENALE EMPLASTRUM. The Name of a Plaiſter deſcribed by *Ætius*, Tetrabib. 3. Serm. 3. C. 3.

RENCHUS. The Name of a Fiſh found in *Bavaria*, celebrated for being a delicious and good Aliment.

RENES. The Kidneys. Theſe are by *Oribaſius*, *Ætius*, and *Paulus Ægineta*, repreſented to be of difficult Digeſtion.

The Kidneys are two pretty ſolid, glandular Bodies, ſituated in the poſterior Part of the Cavity of the Abdomen, on each Side of the Lumbar Vertebræ, between the laſt falſe Ribs, and Oſſa Ilium. The Right Kidney lies under the great Lobe of the Liver, and is conſequently lower than the Left, which lies under the Spleen.

The Figure of the Kidneys reſembles that of a large Bean; their Circumference being convex on one Side, and concave on the other. The concave Side is turned to the Vertebræ, and the convex Side the oppoſite Way. Their Length anſwers to the Diſtance between the laſt falſe Rib and Os Ilium; they are about half as broad as long, and half as thick as broad.

In each Kidney we obſerve a Fore and Back-ſide; an upper and lower Extremity; a great and ſmall Curvature, and a Convexity and Concavity.

The Back-ſide is broader than the Fore-ſide, and the upper Extremity is a little broader and more incurvated than the lower. The Depreſſion in the ſmall Curvature is oblong and uneven, reſembling a Sinus, ſurrounded by ſeveral Tubercles; and as it is turned a little toward the Fore-ſide, this Side is ſomething narrower than the other.

The deſcending Aorta and inferior Vena Cava, lie between the Kidneys, pretty cloſe to the Bodies of the Vertebræ, and to each other; the Artery being on the Left Hand, and the Vein on the Right. Each of theſe large Veſſels ſends out tranſverſely towards each Side, commonly one capital Branch, which goes to the Kidney, and enters the Sinus and Depreſſion thereof, by ſeveral Ramifications.

Theſe Veſſels were by the Ancients termed the emulgent Arteries and Veins, but I chuſe rather to call them the Renal Veins and Arteries. Sometimes there are more than one of each Kind, which is ofteneſt found in the Arteries; ſometimes on one Side only, and ſometimes on both.

The Artery and Vein are not of an equal Length, and the Difference depends on the Situation of the Aorta and Vena Cava; for the Left Renal Artery is ſhorter than the Right, becauſe the Aorta lies neareſt the Left Kidney; and the Left Renal Vein is longer than the Right, becauſe the Vena Cava lies furtheſt from the Left Kidney.

Theſe Veſſels are likewiſe diſpoſed in ſuch a manner, as that the Veins lie more anteriorly than the Arteries; becauſe the Aorta lies cloſe to the Spina Dorſi; whereas the Vena Cava, which perforates the Diaphragm at ſome Diſtance from the Vertebræ, does not join them, till after it has given off the Renal Veins.

Each Renal Artery is ſurrounded by a nervous Net-work, called *Plexus Renalis*, which furniſhes a great Number of Filaments to the Kidneys, that come partly from the ſemilunar Ganglions of the two great ſympathetic Nerves, and partly from the *Plexus Hepaticus* and *Splenicus*. This Renal Plexus ſends likewiſe ſome Filaments round the Renal Veins.

The Kidneys are ſurrounded by a very looſe, membranous and cellular Covering, called *Membrana Adipoſa*, becauſe in fat Perſons the Cells of this Subſtance are filled with Fat. This was for a long time miſtaken for a Duplicature of the Peritonæum, the true membranous Lamina of which covers only the Fore-ſide of the Kidneys; and conſequently they lie without the Peritonæum; becauſe the Portion of that Membrane that covers them cannot be looked upon as an entire Coat; ſo that the only common Coat they have, is the cellular Subſtance, which likewiſe inveſts the Renal Arteries and Veins in Form of a Vagina.

The proper Coat or Membrane of the Kidneys is compoſed of two Laminæ; between which there is likewiſe a very fine cellular Subſtance, which may be made ſenſible by blowing through a Pipe between the two Laminæ.

The external Lamina is very thin, and adheres cloſely to the internal Lamina, by means of the cellular Subſtance. The internal Lamina penetrates every where by numerous Elongations, into the Subſtance of the Kidney, from which it cannot be ſeparated without Tearing.

The Surface of the external Lamina is very ſmooth, poliſhed, and ſhining, and it renders the whole Surface of the Kidney very even and uniform in Adults. In Children, this convex Surface is in a manner divided into ſeveral Lobes or Tubercles, almoſt as in Oxen and Calves; and in grown Perſons we ſometimes obſerve the ſame Inequalities.

The Blood-Veſſels having entered the Kidneys, are ramified every way; and theſe Ramifications ſend out other capillary Branches, which go all the Way to the Surface, where they appear like irregular Stars, and furniſh the proper Membrane of the Kidneys. Sometimes theſe two Ramifications penetrate to the Membrana Adipoſa, and communicate there with the Adipoſe Veins and Arteries.

The proper Membrane having ſurrounded the Kidney, all the way to the Sinus, joins the Veſſels at that Place, and accompanies all their Ramifications through the Body of the Kidney, in form of a Vagina or Capſula; and likewiſe contributes, in part, to form the Pelvis and Calyces, or Infundibula.

We ſometimes obſerve a conſiderable Veſſel to go in or come out from the convex Surface of the Kidney; but this is not common; and in that Caſe, there is a Depreſſion by which the proper Membrane enters, and communicates with that Portion which goes in by the Sinus.

The Tunica Adipoſa, or common Coat, which likewiſe inveſts the great Veſſels to their Entry into the Kidneys, does not ſeem to accompany them any farther; but terminates at the Sinus, in the Interſtices between the Ramifications.

We may diſtinguiſh three Kinds of Subſtances in the Kidney; an exterior Subſtance, which is thick, granulated, and in a manner cortical; a middle Subſtance, which is medullary and radiated, called Striata, Sulcata, or Tubularis, becauſe it ſeems to be made up of radiated Tubes; and an inner Subſtance, which is only a Continuation of the ſecond; and terminates on the Inſide by Papillæ; for which reaſon I have given it the Name of *Papillaris*.

Theſe three Subſtances may be ſeen diſtinctly in a Kidney cut into two equal Parts through the great Curvature. The cortical Subſtance may be obſerved round the whole Circumference; and by the Microſcope we perceive it to be of a ſpungy, granulated, and waving Texture; all its Parts adhering together in a radiated Manner. Its Colour is a bright whitiſh Grey.

By fine anatomical Injections and in Inflammations, we diſcover an Infinity of ſmall capillary Veſſels, which run in various Directions, between and round the different Portions of this Subſtance; and by the Help of a Microſcope, we likewiſe ſee great Numbers of ſmall red Corpuſcles more or leſs round, and diſpoſed almoſt like Bunches of Currants. Theſe ſmall Corpuſcles are, perhaps, only the Extremities of the cut Veſſels, filled either with Blood, or with a coloured Injection.

The other two Subſtances, that is, the medullary or ſtriated and papillary, are really but one and the ſame Maſs, of a more reddiſh Colour, the convex Side of which riſes at ſeveral Places into narrow Tubercles, lodged in the ſame Number of Cavities or Depreſſions. The radiated Striæ are afterwards continued to

the papillary Portion; and the Papillæ form, in ſome meaſure, ſo many Centers of theſe Radii, oppoſite to the Tubercles.

The medullary Subſtance is likewiſe diſtinguiſhed from the cortical, by the arterial and venal Arches, which ſend capillary Ramifications on all Hands; and its Colour is more or leſs red.

The Papillæ, which are only a Continuation of the medullary Subſtance, as has been ſaid, are often a little paler than that Subſtance. They are ten or twelve in Number, very diſtinct from each other, reſembling the ſame Number of Cones, with very broad Baſes and obtuſe Apices.

At the Point of each Papilla we ſee, even without a Microſcope, in a ſmall Depreſſion, ſeveral very ſmall Holes, through which little Drops may be perceived to run when the Papillæ are compreſſed. Theſe are little Drops of Urine, which being filtred, partly in the cortical, and partly in the medullary or tubular Subſtance, do afterwards paſs through the Subſtance of the Papillæ, and are diſcharged by theſe Orifices.

Each Papilla lies in a kind of membranous Calyx or Infundibulum, which opens into a common Cavity, called the *Pelvis*. This Pelvis is membranous, being of the ſame Structure with the Calyces of which it is a Continuation; and its Cavity in Man is not uniform, but diſtinguiſhed into three Portions, each of which contains a certain Number of Infundibula, or Calyces, together with the Papillæ which lie therein; and ſometimes we find two or three Papillæ in the ſame Infudibulum.

At the Place where theſe Infundibula ſurround the Baſes of the Papillæ, they ſend Productions into the medullary or radiated Subſtance of the Kidney, which accompany the Blood Veſſels, and ſerve for Capſules or Vaginæ to all the vaſcular Arches, both arterial and venal, and to their different Ramifications, quite through the cortical Subſtance, and as far as the Surface of the Kidney.

URETERS.

After the Infundibula have contracted in a conical Form round the Apices of the Papillæ, each of them forms a ſmall ſhort Tube or Gullet, which uniting at different Diſtances along the Bottom of the Sinus of the Kidney, form three large Tubes, which go out from the Sinus, in an oblique Direction from above downwards, and immediately afterwards unite into one Trunk.

This Trunk becomes a very long Canal, called the Ureter. In Men the three Tubes ſupply the Place of what is called the Pelvis in Brutes, and might more properly be called the Roots and Branches of the Ureters than the Pelvis; which Name would agree beſt to the Trunk, as being larger than the reſt of the Ureter. The Ureters are commonly two in Number, one for each Kidney; but ſometimes there are more than two.

The Situation of the Trunk, and of the Roots and Branches of each Ureter, with reſpect to the renal Artery and Vein, is in the following Manner; the Artery is in the upper Part of the Sinus, and partly before the Vein. The Vein is about the Middle, and between the Artery and Ureter. The Ureter is in the lower Part, a little behind the Vein, and it is partly ſurrounded by one Branch of the Artery.

This Diſpoſition appears plainer near the anterior than near the poſterior Side of the Kidney, becauſe this laſt is broader than the former; and we likewiſe ſee there the three Branches of the Ureter, of which the uppermoſt is the longeſt, and the loweſt is the ſhorteſt, becauſe of their oblique Direction downward.

From this Deſcription we ſee that in the human Kidney there is no other common or uniform Pelvis, but the Trunk or Head of the Ureter, and the three great Branches. To have a true Idea of their Diſpoſition, we muſt imagine, that the Ureter enters the Kidney by the lower Part of the oblong Sinus; that it increaſes gradually in Breadth as it advances, and that it is divided into three Branches, before it enters the Subſtance of the Kidney.

One of theſe Branches may be reckoned a direct Continuation of the Ureter, and it is longer than the reſt; being extended from the lower to the upper Part of the Sinus, and it may be found without much Preparation. The other two Branches are ſhorter, and cannot be well diſcovered without an artificial Separation. The Angles between theſe Branches at their Baſes, or at the Head of the Ureter, are not pointed as thoſe of other Ramifications; but formed by a round Incurvation, which is generally ſurrounded by Fat.

Theſe firſt Branches of the Ureters produce other ſmall Branches at the Bottom of the Sinus, which are diſpoſed in Pairs. Theſe ſmall collateral Branches extend in Breadth, and form the Infundibula or Calyces, in which the Papillæ are lodged; the great Circumference of which produces, in the Subſtance of the Kidney, the different Vaginæ of the vaſcular Arches, and of their Ramifications. The internal Lamina of the Kidney is continued round theſe Vaginæ; and the external Lamina is expanded round the firſt Branches, round the Trunk, and round all the reſt of the Ureter.

If the Trunk of the Ureter be ſplit on that Side which is next the Vertebræ, and this Section be continued to the Extremity of the ſuperior Branch; we may obſerve, immediately above the Trunk, two Holes lying near each other, which are the Orifices of the ſmall collateral Branches, and Gullets of the Infundibula. A little above theſe Holes, there are other two very much like them; and ſo on all the Way to the Extremity of the ſuperior Branch, which terminates likewiſe by theſe Gullets of the Infundibula. And in each of theſe Gullets we may obſerve, at leaſt, the Apex of one Papilla.

A Section begun on the Convex Surface of the Kidney, and carried from thence to the Trunk of the Ureter, diſcovers the Extent of the Papillæ very plainly, and likewiſe the Infundibula, their Gullets, *&c.*

The Ureters run down obliquely, and with a very ſmall Degree of Inflexion, from the Kidneys on the lateral Parts of the inner or anterior Side of the Os ſacrum, and paſſing between the Rectum and Bladder, they terminate in the laſt of theſe Viſcera.

They are compoſed of three proper Coats; the firſt of which, that ſurrounds the reſt, is of a whitiſh Colour, and of a very compact filamentary Texture, being ſtretched with Difficulty, and appearing like a filamentary Subſtance degenerated. The next Coat is of a reddiſh Colour, ſtronger than the firſt, and made up of different Strata of Fibres, which interſect each other; but it is very hard to determine whether they are muſcular or ſimply membranous.

The innermoſt Coat is in ſome Meaſure Ligamentary, and lined by a very fine Membrane, which covers a very delicate reticular Texture of Veſſels. It is ſlightly granulated like ſhorn Velvet; and moiſtened all over by a mucilaginous Liquor. It has ſeveral longitudinal Rugæ, which are interſected by a great Number of ſmall tranſverſe Rugæ.

Beſides theſe proper Coats, the Ureters are inveſted by the cellular Subſtance of the Peritonæum, the membranous Lamina of which covers likewiſe about two thirds of their Circumference, ſometimes more ſometimes leſs, but never ſurrounds them entirely. So that when they are examined in their natural Situation, they appear like Ropes lying behind the Peritonæum, and jutting out more or leſs towards the Cavity of the Abdomen, together with that Portion of the Peritonæum, which covers them.

All that has been ſaid about the Structure of the Ureters, Pelvis, Arches, Striæ, Foſſulæ, and Holes at the Apex of the Papillæ, appears moſt diſtinctly, when theſe Parts are examined in clear Water.

GLANDULÆ RENALES, VULGO CAPSULÆ ATRABILARIÆ.

Immediately above each Kidney lies a glandular Body, called by the Ancients *Capſulæ Atrabilariæ*; by others *Capſulæ Renales*, *Renes Succenturiati*, and *Glandulæ Renales*; and they might be properly enough termed *Glandulæ ſupra Renales*. They are ſituated on the upper Extremity of each Kidney, a little obliquely; that is, more toward the inner Edge and Sinus of the Kidney, than toward the outer convex Edge.

Each Gland is an oblong Body with three Sides, three Edges and two Points, like an irregular Creſcent with its great or Convex Edge, ſharp, and the ſmall concave Edge, broad. Its Length is about two Thirds of the greateſt Breadth of the Kidney; and the Breadth of its middle Portion is about one third of its Extent between the two Extremities, ſometimes more ſometimes leſs. Its Colour is a dark yellow.

It has one anterior, one poſterior, and one lower Side, which laſt may be termed the Baſis; and it has one upper, and two lower Edges, whereof one is anterior, the other poſterior. The upper Edge may be called the Criſta, and the two lower Edges, the Labia. One of its Extremities is internal, or turned inward toward the Sinus of the Kidney; the other is external, or turned outward toward the gibbous Part of the Kidney. The Figure of this glandular Body may alſo be compared to that of a ſingle Cock's Comb, or to the Top of an Helmet.

The Surface of theſe Glands is uneven; the Foreſide is the broadeſt, and the loweſt Side or Baſis the narroweſt. Along the Middle of the anterior Side, a Ridge runs from the Edge of the inner Extremity, a little above the Baſis, to the Joint of the other Extremity, and divides this Side into two equal Parts, like the Middle Rib of the Leaf of a Tree, and on the lower Side under the Baſis, there is a kind of Raphe or Suture.

The Blood-Veſſels of theſe Glands come from the Renal and Diaphragmatical Veins and Arteries, and alſo from the *Aorta* and *Vena Cava*, and from the Cæliac Artery. Theſe Veſſels are termed the Capſular Arteries and Veins; and as they enter the Glands, they ſeem to be inveſted by a Vagina. They are not always derived from the ſame Sources, neither is their Number the ſame in all Subjects; and there is commonly a pretty large Vein, which runs along the Ridge. The Nerves

on

on each Side are furniſhed by the neighbouring ſemilunar Ganglion, and by the Renal Plexus, which depends on it.

In the Inſide of theſe Capſulæ, there is a narrow triangular Cavity, the Surface of which is full of ſhort ſtrong Villi of a yellowiſh Colour; but in Children it is reddiſh, and of a dark brown in aged People. The Sides of this Cavity are connected by a great Number of Filaments; and they appear to be wholly glandular, that is, to be filled with very fine ſmall folliculous Corpuſcles. Along the Top of the Gland, theſe Sides touch each other immediately.

In Opening this Cavity, we find a granulated or follicular Subſtance, which fills it almoſt entirely; and the Blood-Veſſels are diſtributed on this Subſtance, as well as on the Sides of the Cavity. If the Section be begun at the great Extremity of the Capſula, and be continued through the upper Edge; and if the lateral Portions be afterwards ſeparated, the glandular Body appears like a kind of Criſta, raiſed from the Middle of the Bottom of the Cavity.

This glandular Body or Nucleus, adheres more cloſely to the Bottom or Baſis of the Cavity, than to the two Sides, eſpecially near the great Extremity; but yet it may be ſeparated both from the Baſis and Sides, being connected to them by a great Number of ſmall Filaments. It adheres leaſt to the Baſis near the ſmall Extremity.

The Capſular Vein, which comes ordinarily from the Renal Vein, is much larger than the Arteries; and it communicates with the Inſide of the Capſula, much in the ſame manner as the Splenic Vein with the Cells of the Spleen; for it may be inflated by blowing into any Part of the Capſular Cavity, and the Air alſo paſſes into the Renal Vein.

This Cavity contains an unctuous viſcid Liquor, of a yellowiſh red Colour, which, with Age, changes gradually into a yellowiſh purple, a dark yellow, and a black yellow; and ſometimes it is perfectly black; but even then, if it be ſpread thin on a large Surface, it appears yellow. I have ſometimes found it not only reddiſh, but mixed with real Blood.

The Uſes of theſe Renal Glands have not as yet been diſcovered; and all that we know about the Liquor contained in them, is, that it reſembles the Bile. They are very large in the Fœtus, and diminiſh in Adults. Theſe two Phænomena deſerve our Attention.

They lie ſometimes directly on the Top of the Kidneys, but I never found them on the gibbous Part. The Gland on the Right-Side is partly connected to the Diaphragm, under and very near the Adheſion of the great Lobe of the Liver to that Muſcle. That on the Left-Side adheres to the Diaphragm below the Spleen; and both theſe Connexions are confined to the contiguous Portions of the inferior Muſcle of the Diaphragm. They are involved together with the Kidneys, in the Membrana Adipoſa; of which a very thin Portion inſinuates itſelf between the Kidneys and Glands, and alſo between them and the Diaphragm; ſo that they adhere to both by the Intervention of the cellular Subſtance, which, in ſome Subjects, contains a Stratum of Fat.

The Venal Ridge already mentioned, ſinks ſo deep into the Fore-ſide in ſome Subjects, that the upper Part of this Side appears to be ſeparated from the lower; but this is ſeen moſt diſtinctly when the Capſula is examined in clear Water.

When the Capſular Vein is opened lengthwiſe with the Point of a Lancet, we diſcover in it a great many ſmall Holes, many of which are only the Orifices of the Branches of the Vein; others are ſimple Holes; and it is, perhaps, through theſe that the Air paſſes into the Gland, as already mentioned.

On the outer Surface of theſe Capſulæ, we obſerve a very thin diſtinct Coat, ſeparate from the cellular Subſtance that ſurrounds them. Sometimes this Coat is raiſed by an uneven Stratum of Fat, which makes it appear granulated; and for the ſame reaſon, the Capſulæ are of a pale Colour, like a *Corpus Adipoſum*.

The Liquor contained in them appears ſometimes in the Fœtus, and, in young Children, of a bluiſh Colour, inclined to red.

To be able to diſcover the Uſes of theſe Capſulæ, we muſt not only attend to the two Circumſtances already mentioned, but alſo to their external Conformation, which is commonly more regular in the Fœtus, and in Children, than in Adults and in old People. We muſt alſo conſider the Conſiſtence and Solidity of their Subſtance, which is greater before Birth, and in Childhood, than in an advanced, or Old-Age; in which they are often very flaccid, and very much decayed: And this, perhaps, may be the Reaſon why the Figures given of theſe Glands, taken out of their Membrana Adipoſa, are ſo very irregular and different from what I have demonſtrated for above twenty Years paſt.

Valſalva endeavours to prove, the *Renes Succenturiati*, or *Glandulæ Renales*, to be Organs of Generation, or aſſiſtant to them; and gives the following Reaſons for his Opinion: He obſerves the ſeminary Veſſels of ſeveral Fowls to come from theſe Capſulæ, before they are ſent from the Teſticles. In the Viper and Water Tortoiſe, he remarks ſuch membranous Connexions between the *Renes Succenturiati* and the Teſticles, as make it probable that ſome Excretions are ſent through the Capſulæ to the Teſticles. He affirms his having ſeen Veſſels that were neither nervous, ſanguiferous nor lymphatic, going from the human Capſulæ to the Teſtes. His Obſervations are much the ſame as to Females. To theſe he ſubjoins the Conſent and Sympathy obſerved by Phyſicians between the Loins and the natural or genital Parts. To confirm all, he relates the following Experiment: He cut away one Teſticle, and extirpated the Kidney of the oppoſite Side of a Whelp. The Wounds healed, but the Creature was of a very lax Habit, and was ſo far from attempting Coition with Bitches, that he did not ſeem fond of them when they were proud.

Valſalva had endeavoured to ſecure the Honour of this Diſcovery to himſelf, by entering a publick Proteſt, that no other ſhould claim it. Mr. *Ranby* ſuſpected that the Duct, which the *Italian* Literary Journals mentioned as the principal Part of this Diſcovery, was no other than an Artery ſent off from that of the Capſula on each Side, to the Teſticles of Men, and Ovaria of Women. *Edinburgh Medical Eſſays*, Vol. II. p. 372.

THE URINARY BLADDER.

The Bladder is a kind of membranous and fleſhy Pouch or Bottle, capable of Dilatation and Contraction, ſituated in the lower Part of the Abdomen, immediately behind the Symphyſis of the Oſſa Pubis, and oppoſite to the Beginning of the Inteſtinum Rectum. The Figure of it is nearly that of a ſhort Oval. It is broader on the Fore and Back-ſides, than on the lateral Parts; rounder above than below, when empty, and broader below than above, when full.

It is divided into the Body, Neck and Bottom, into an anterior, poſterior, and two lateral Parts. The upper Part is termed the Fundus or Bottom, and the Neck is a Portion of the lower Part, which is contracted like the Gullet of ſome Veſſels.

The Bladder is made up of ſeveral Coats, almoſt like the Stomach. That Part of the external Coat which covers the upper, poſterior and lateral Sides of the Bladder, is the true Lamina or Membrane of the Peritoneum; and the reſt of it is ſurrounded by a cellular Subſtance, by the Intervention of which, the Peritonæum is connected to the Muſcular Coat.

The proper Coats are three in Number, one muſcular, one nervous, and one villous, which is the innermoſt. The Muſcular Coat is compoſed of ſeveral Strata of fleſhy Fibres; the outermoſt of which are moſtly longitudinal; the next to theſe are more inclined toward each hand; and the innermoſt, more and more oblique; and they become at length almoſt tranſverſe. All theſe Fibres interſect each other in various manners, and they are connected together by a fine cellular Subſtance, and may be ſeparated by inflating that Subſtance.

The nervous Coat is nearly of the ſame Structure with the Nervous Coat of the Stomach.

The internal Coat is ſomething granulated and glandular, and a mucilaginous Serum is continually diſcharged through it, which moiſtens the inner Surface of the Bladder, and defends it againſt the Acrimony of the Urine. It appears ſometimes altogether uneven on the Inner-ſide, being full of Eminences and irregular Rugæ when empty, and in its natural State of Contraction. Theſe Inequalities diſappear when the Bladder is full, or when it is artificially diſtended by Air, or by injecting any Liquid.

At the Top of the Bladder, above the Symphyſis of the Oſſa Pubis, we obſerve a ligamentary Rope, which runs up between the Peritonæum and the Linea Alba of the Abdomen, all the Way to the Navel, diminiſhing gradually in Thickneſs, as it aſcends. This Rope had a particular Uſe in the Fœtus. It is ſufficient to add, that it is in part originally a Production of the inner Coats of the Bladder, which Production is termed *Urachus*.

This Rope is compoſed alſo of two other ligamentary Elongations, which are the Extremities of the umbilical Arteries. Theſe Arteries come from the Hypogaſtricæ, run up by the Sides of the Bladder, and remain hollow and filled with Blood, even in Adults, as high as the Middle of the Bladder, through all which Space they alſo ſend off Ramifications. Afterwards they loſe their Cavity, and become ligamentary as they aſcend. At the upper Part of the Bladder, they approach each other, and, joining the Urachus, form that Rope, which may be termed the ſuperior Ligament of the Bladder.

The external Fibres of the muſcular Coat are more numerous than the internal; and the moſt longitudinal anterior Fibres form a kind of Incurvation round the Urachus, at the Top of the Bladder, much like that of one of the fleſhy Portions, which ſurround the ſuperior Orifice of the Stomach, and lower Extremity of the Oeſophagus. This Incurvation paſſes behind the Urachus.

The Portion of the Peritonæum, which covers the poſte-

rior Convex Side of the Bladder, forms a very prominent tranſverſe Fold, when the Bladder is contracted, which diſappears when the Bladder is extended. This Fold ſurrounds the poſterior Half of the Bladder, and its two Extremities are elongated toward each Side; by which Elongations a kind of lateral Ligaments of the Body of the Bladder is formed, which are more conſiderable in Children than in Adults.

The lower Part of the Bladder, which deſerves the Name of Fundus much better than the upper Part, is perforated by three Openings, one anterior and two poſterior. The anterior Opening is formed by an Elongation of all the proper Coats, in Form of a Gullet, turned much in the ſame Manner with the inner Orifice of the Roſtrum of the Head of an Alembic. This Elongation is called the Neck of the Bladder.

The other two Openings, in the true Bottom of the Bladder, are formed by the Ureters, which, in their Courſe downward, run behind the Spermatic Veſſels, and then behind the lower Part of the Bladder, approaching each other. Each Ureter lies between the umbilical Artery and Vas Deferens of the ſame Side, the Artery lying on the Outſide of the Ureter, and the Vas Deferens on the Inſide.

Afterwards they get between the Vaſa Deferentia, and the Bladder, croſſing theſe Canals; and then at about a Finger's Breadth from each other, they begin to pierce the Coats of the Bladder. They run a little Way between the muſcular and nervous Coats, and open into the Bladder obliquely, ſomething nearer each other, than when they firſt entered its Coats.

The Orifices of the Ureters in the Bladder are ſomething oval, and narrower than the Cavity of the Ureters immediately above them. The Edge of theſe Orifices is very thin, and ſeems to be formed merely by the Union of the internal Coat of the Bladder, with that of the Ureters.

The Arteries of the Bladder are furniſhed by the *Hypogaſtricæ* or *Iliacæ internæ*, being Branches of the *Arteria Sciatica*, *Epigaſtrica* and *Umbilicalis* on each Side. The Veins come from thoſe of the ſame Names with the Arteries.

The Nerves of the Bladder come from the *Crurales*, and alſo from the *Sympathetici Maximi*, by Means of their Communication with the *Crurales*. It has alſo ſome Nerves from the *Plexus Meſentericus inferior*.

Beſides the Ligaments already mentioned, there are alſo two ſmall ones, by which the anterior Part of the true Bottom of the Bladder is connected to the Oſſa Pubis. *Winſlow's Anatomy*.

As the Kidneys, eſpecially that on the Right Side, are by their Situation and Connection capable of being greatly aſſiſted in their Excretory Office, by the Motion of the adjacent Parts; and as they are defended by the Membrane of the circumambient Peritonæum, and wrapt up in a kind of dry Fat; ſo they almoſt conſtantly receive the ſuperincumbent Glands into their ſuperior Part, which inclines ſomewhat to a Concave, and which is hardly ever of the ſame Form and Bulk in different Men. Then receiving one or more conſiderable Ramifications from the Aorta Deſcendens; acquiring, alſo, another Membrane, and four or five large Ramifications, they from theſe receive many other ſmaller Ramifications, from which winding Veſſels, ſo ſmall as to eſcape the Sight, are diſtributed through all the Parts of the Kidneys. The ſmall Ramifications of theſe minute Arteries, in their vermicular Courſe, being mutually united in ſome Parts, and again ſeparated, form as it were Conglomerations, from which ſeem to ariſe not only the ſmall returning Veins, but alſo the minute lateral Ducts, which are almoſt pellucid, and which receive the Urine ſeparated from the ſmall Arteries, convey it from them; and when, after uniting, they have formed many polygonous pyramidal Bodies, they at laſt generally terminate in twelve membranaceous Bodies, called *Papillæ*, in which many Orifices of the renal Ducts open obliquely every where, both externally and internally.

There are alſo found in the Subſtance of the Kidneys, ſmall round hollow Bodies, every where covered with minute Veſſels, furniſhed with Veins and Nerves, and reaching to the urinary Ducts. This is confirmed by the Kidneys of Hedgehogs, Tortoiſes, and Diſeaſes in the Kidneys, as alſo the Sight of the Kidneys in a Fœtus. For this Reaſon the Urine ſeems here to be ſecreted, by a double Apparatus, a curious and laborious one of the glandular Kind, and one more ſimple, which receives its Name from *Ruyſch*, a Circumſtance by no means repugnant to the uſual Methods of Nature in other Parts; as in the Liver for Inſtance. But *Ruyſch*, after the moſt ſtrict and exact Scrutiny, thinks that theſe were not really Glands, but only Intorſions of ſmall Arteries.

The other Part of the renal Artery is neceſſarily employed in ſupplying Life and Heat to the Subſtance of the Kidneys; and from the Blood, conveyed by this Part of the Artery, ſeems to ariſe that large Quantity of Lymph, which returning from the Kidneys, and being of the laudable and not of the excrementitious kind, mixes with the Chyle, circulates with the Blood, and does not taſte like Urine. Hence, alſo, there will, without Doubt, ariſe proper correſponding Veins.

For the ſmall Veins ariſing from the minute Roots of the renal Arteries being collected, become larger, are united like Arteries in their Diviſion; and at laſt join Trunks whoſe Number is uncertain. Theſe convey in various Manners to the Vena Cava the remaining Blood.

The Renal Papillæ drop out the Urine convey'd into the urinary Ducts into the large Cavity, form'd by the expanded Membrane of the Pelvis, which is furniſhed with a ſoft Fat. Hence being collected, retarded and mix'd, it is forced into the Ureters, which are formed by an Anguſtation of the Pelvis, and which convey it to the Bladder.

For from the Circumference of the Papillæ ariſe about eleven or twelve Canals, which receive, and convey the Liquor diſcharged from them into three large Ramifications, which, when collected into one, form a large Pelvis, which terminates in one membranous, thick and ſtrong Duct, furniſh'd with Arteries, Veins, Nerves, lymphatic Veſſels, moving Fibres, and mucilaginous Lacunæ, fit for lubricating its Sides. This Duct is called the Ureter, which running firſt ſtrait downwards, and ſoon after bending all along under the Lamina of the Peritonæum; and being in various Places of an unequal Breadth, is at laſt inſerted in the poſterior Part of the Bladder, about two Finger Breadths from its inferior Neck, and about the ſame Diſtance from each other. Then perforating the exterior Coat, and running, about a Fingers Breadth, between it and the anterior Coat; and running down obliquely, it penetrates into the Cavity of the Bladder. Then its Fibres being lengthened, and running downwards, it forms a round and long Body, by which the Bladder, when full, is hindered from returning the Urine to the Ureters; which, when the Bladder is expanded, are drawn downwards, and clos'd up by this Body, and convey the renal Urine ſafe to the Bladder: And this Structure hinders the Urine from riſing again into the Ureters, however the Bladder ſhould be compreſſed.

All theſe Obſervations are confirm'd by microſcopical Diſcoveries, Injections, Ligatures, and comparative Anatomy, in Hedge-Hogs, Dormice, Tortoiſes, Bears, Oxen, Birds, human Fœtuſes, the Diſſection of Patients ſubject to Diſorders of the Reins, and monſtrous aud preternatural Kidneys.

Hence we may underſtand, that the mechanical Secretion of the Urine is made by the Force of the Heart and ſtronger Arteries, by which the aqueous Part of the Blood is forced into numberleſs Flexures, Gyrations, Reſiſtences, oppoſite Motions, Concuſſions, and Commixtions; and at laſt its more fluid Part is ſecreted, propell'd, collected and expell'd through Ducts, only ſomewhat narrower than theſe Blood-Veſſels.

There is, therefore, no Occaſion for accounting for the Secretion of the Urine by Attraction, Emulſion, or other Powers of a like Nature.

Neither is there any Neceſſity for a Fermentation, in order to account for this; ſince, in this Affair, neither the Place, the Cauſe, the Time, the Matter, the Mixture, nor the Effects of a Fermentation are to be obſerved.

Nor for the ſame Reaſons are we to ſuppoſe a fuſing and precipitating Power in the Parts ſubſervient to this Secretion.

'Tis ſufficiently obvious, that all the Humours, which are leſs thick than the Urine, will be diſcharged this Way, provided they are only applied to theſe Veſſels. Hence we underſtand, that there is a Cauſe which hinders them from flowing here; or if they do that, ſudden and great Weakneſs muſt be produced. The Renes Succenturiati always lying on the ſuperior Parts of the Kidneys; but being ſeparated from them by the interpoſed Fat, contiguous to the Diaphragm, united by Blood-Veſſels, preſſed between the Diaphragm and the Kidneys, furniſhed with Arteries, wanting peculiar Emiſſaries, in Fabric reſembling the Spleen, and ſubject to the ſame Things, and pouring almoſt all their Blood through their Veins into the emulgent Veins, perhaps here performs this Office, the venous renal Blood being, by a ſaline Solvent, depriv'd of its moſt liquid Part, after the Secretion of the Urine, as the ſplenic Blood does to the Blood of the Vena Portæ; or perhaps theſe are ſubſervient to other Uſes. But this Theory is in all Probability juſt.

So that a continual and uninterrupted Secretion of the Urine is the primary Cauſe of the Soundneſs of the Kidneys and Ureters, as alſo the Cauſe why they are neither obſtructed nor concreted by their own Collapſion or Preſſure. *Boerh. Inſtitut.*

PROCESSES UPON URINE.

Urine is neither acid, nor alcaline, but fetid.

Take the Urine of a Man in Health, made twelve Hours after Eating or Drinking, which muſt therefore have remained

ſo long in the Body, and have circulated almoſt the ſame time therein, and have been mixed with nearly all the Juices in all the Veſſels, by means of the vital Powers. It is therefore an aqueous Lixivium, that has waſhed away, and brought off with it, whatever would diſſolve in Water, and run thro' the fine urinary Veſſels of the Kidneys; particularly it contains the ſpirituous, ſaline, and ſaponaceous Matters of the Blood; and when thus long retained and digeſted, it acquires the true Nature of the Body, as being wrought upon by the vital Powers for twelve Hours ſucceſſively; at which time the Milk has loſt its own Nature in the Body, and now begins to be converted into the Serum of the Blood. And for this Reaſon, ſuch Urine ſhould be choſe as is well concocted, and diſcharged at twelve Hours Diſtance from Feeding, the thinner and more crude being come away before. Such Urine, therefore, may always be collected without the Body, and yet retain and perfectly exhibit the Nature of the animal Juices, and their Principles. This Urine is not acid, becauſe it neither taſtes nor ſmells ſour, nor gives a red Colour by mixing with theſe Juices, that turn red with Acid: And, laſtly, becauſe, if heated and mixed with Oil of Tartar per Deliquium, it affords not the leaſt Sign of Effervescence. And if another Part thereof be heated and mixed with the alcaline Spirit of Sal Ammoniac, it manifeſts no Sign of Effervescence; beſides, what ſeems ſtranger, the Urine of a Man who drank a large Quantity of Rheniſh Wine, which is conſiderably ſour, and alſo of ſour Beer, uſed much Vinegar in his Sauce, and eat largely of Fruit, did not afford the leaſt Signs of Acid, upon any Experiment, twelve Hours after Eating. So likewiſe the Urine diſcharged by young Female Perſons of weak Conſtitutions, that uſe little more than acid Vegetables for their Meat and Milk for their Drink, manifeſts no Acid twelve Hours after Meals; the natural Powers, therefore, have in this time conquered that Tendency which the Vegetables had to Acidity, or elſe the Acid that was in them. *Helmont*, therefore, juſtly ſaid, that Acids were Enemies to the Veins; but his Followers hence unjuſtly forbid the Uſe of Acids in Diet and Medicine, as if they were poiſonous; ſuppoſing them prejudicial to the firſt Paſſages. Theſe Experiments will be allowed by Chymiſts; but it may, perhaps, move them to hear, that there is no manner of Alcali contained in this Urine, and yet the thing is certain; for if, to ſeparate Particles of this heated Urine, there be ſucceſſively poured Vinegar, Lemon-Juice, Spirit of Nitre, Spirit of Salt, and Oil of Vitriol, no Effervescence enſues; but theſe Acids, mixed with warm Urine, diſcharged at the Diſtance of twelve Hours after Eating, unite therewith, as Water unites with Water, without Bubbles and without Hiſſing. Such Urine, alſo, does not turn the Juices of Herbs to a green Colour, as alcaline Salts do.

REMARKS.

Hence we may collect, that the Powers of the Body change Acids, ſo that they remain no longer the ſame, and prevent Things diſpoſed to Acidity from becoming acid; and that, in Health, alcaline Salts are never produced, but only ſuch as are neutral. This I have obſerved in the Urine of Perſons in high Fevers, and inflammatory Diſeaſes, where the vital Actions being increaſed, rendered the Urine flame-colour'd, fetid, ſharp, and little in Quantity; for even ſuch Urine, examined by the Methods above-mentioned, gave new Signs of its being alcaline; whence I was led to conſider, whether, in a perfect Stoppage of Urine, where this Liquor is long detained, heated and agitated in the Body, it would not become alcaline. And it happened, that an eminent Perſon in Years, falling into this Diſtemper, which proved fatal to him, had no Diſcharge of Urine for five Days, but, on the ſixth, ſuddenly made a few Ounces, which was red, turbid, and fetid; but he had hence no Relief, and made not a Drop afterwards, but died. This Urine I directly carried home with me, and preſently examined by the known chymical Methods, none of which ſhew'd it to be alcaline; whence I underſtood, that Urine could not become alcaline in the Space of a hundred and twenty Hours, tho' agitated by the Heat of the Body, and the Action of Circulation. For in the Patient above-mentioned, the Bladder contained no Urine; and I have never found any of the Humours in Health to be alcaline, though they may become ſo from other Cauſes. Nor did I ever find them alcaline in the moſt putrid Diſeaſes, whether acute or chronical. I remember once, an aged Corn-Merchant had a large Stone in his Bladder, but being not a fit Subject to be cut for it, his Urine would often, when he was in exquiſite Torture, ſmell alcaline; and as he had frequent Stoppages, a ſkilful Surgeon was obliged often to put back the Stone from the Neck of the Bladder, with a Catheter, towards the Bottom; but being once abſent, the Patient continued in Pain, without making Water for ſeveral Hours; but the Operator returning, and performing his uſual Office, the Urine came out ſo ſharp, alcaline and putrified, and with ſuch a peculiar Stench of digeſted Urine, that the Surgeon inadvertently drawing the Vapour thereof into his Lungs, was thereby diſordered for ſome Days. Whence I conceive, not having any Opportunity of examining this Urine, becauſe it was ſpilt, that, being attracted into the Pores of the Spongy Stone, and lodging therein, it was thus digeſted by the Heat, and ſo, perhaps, acquired a true alcaline Acrimony. However this be, it is certain, that the Urine contains no native alcaline Salt, and, conſequently, no other Humour of the Body; becauſe the Urine contains more Salts than any other animal Liquor; and becauſe the Salts of the Urine are more acrimonious, and eaſier rendered alcaline, than of any other Liquor in the Body. Whence thoſe Artiſts are greatly deceived, who ſo loudly cry out againſt the natural, volatile, oily, alkaline Salts in the Body. This is an Error introduced into Medicine by an imprudent Cultivation of Chemiſtry, which the more prudent Cultivation thereof muſt correct. The fetid Smell of Urine in Health is, therefore, entirely owing to the attenuating, putrid, and volatilized Oil, which is inſeparable from it; and not to a volatile, alcaline Salt. Its bitter, nauſeous, and ſaline Taſte, proceeds from the compound Salt of the Urine, and from the Oil; as alſo, from the Sea-Salt which Urine generally contains.

FRESH URINE, DISTILLED IN A VERY CLOSE VESSEL, AFFORDS A FETID, NAUSEOUS WATER, NEITHER ALCALINE, ACID, SALINE, NOR VINOUS.

Take well-concocted human Urine, diſcharged in Health, and diſtil it in a Glaſs-Body, with a gentle Fire of a hundred and fifty Degrees, uniformly kept up, till only a twentieth Part remains behind. There will come over a limpid Water; the Urine in the mean time gradually changes from its natural Straw-Colour to Red; and the more of this pellucid Water comes over, the deeper that red Colour appears; and at length the Remainder becomes almoſt of black Red, very thick, turbid, opake, frothy, and tenacious. The firſt limpid Part has a particular nauſeous Smell, but not that of a volatile Alcali; but what ſeems ſtrange, though it be often diſtilled over again, yet it always retains this nauſeous Odour, and even though it ſhould long ſtand in the open Air. This corrupt Odour, therefore, is inſeparable, and intimately mixed with the Liquor, ſo as not to be deſtroyed even by the Addition of an Acid. It ſeems to reſemble nothing more than that diſagreeable Exhalation, which ariſes from Wounds in the Abdomen, or the Carcaſs of a Man freſh opened after a violent Death. The nauſeous Taſte of that Water, though ſomewhat putrid, is not alcaline, or any way ſaline, howſoever it be diſtilled. Again, in Diſtillation thereof, there appear no Veins upon the Glaſs Still-head, as in the Diſtillation of vinous Spirits; and if the Water that firſt comes over, be a ſecond time diſtilled, neither thus will the leaſt Quantity of any ſuch Spirit appear; and though ever ſo carefully rectified, it has, ſo often as I have examined it, never took Flame, but always quenched Fire. Even the Urine of ſuch Men as are great Drinkers of ſtrong Liquors, ſuch as Wines and diſtilled Spirits, never affords any thing inflammable. When this firſt diſtilled Liquor of the Urine is mixed with Acids, it never gives any Signs of Effervescence, nor changes Juices green, as Alcalies always do; nor conſiderably precipitates the Solutions made with Acids; and by no manner of Rectification will it afford a manifeſt Salt, nor ever change Acids into a compound neutral Salt. Conſequently it is no alcaline Liquor; nor does it manifeſt the leaſt Signs of Acidity upon any kind of Experiments; as the Addition of fixed and volatile Alcalies, the various Juices that turn red with Acids, and the like. Whence we ſeem to have proved our Point.

REMARKS.

We may learn many momentous Particulars in Medicine, from this ſlight Experiment. Thus, 1. We ſee the lighteſt, thinneſt, and moſt volatile Part of the healthy Juices is nearly elementary Water, excepting that there is inſeparably joined therewith that other equally light, thin, volatile, fetid and ſeemingly corrupted Matter, not proceeding from a ſaline Principle, but rather from an oily one, and yet no ways vinous or inflammable. 2. Hence there is no Fermentation in the Juices, nor no Production of inflammable Spirit, which is eaſily ſeparated from Water; whereas this fetid Part can by no Means be ſeparated from its Water. 3. Conſequently, there is no inflammable Spirit in the vital Juices of the Body. 4. Oil, by the vital Powers of the Body, is rendered much more volatile, than any Salt in the Body, contrary to what is generally believed. This peculiar, fetid, oily Matter is ſcarce otherwiſe found, than in the Matter of Perſpiration, the Sweat, and the Vapour which naturally reſides in the Cavities of the Body. Vinous Spirits, when drank, do not go to the urinary

urinary Paſſages; and may, therefore, riſe to the Head, diſturb the Brain, the common Senſory, and the Origin of the Nerves; and hence (perhaps) they ſo wonderfully affect the Actions of the Cerebrum and Cerebellum. Hence (perhaps) it is, that they ſo eaſily exhale from the Body, poſſibly at the Surface of the Skin. Our preſent Proceſs alſo ſhews, that there is no volatile Salt in the Body, capable of riſing with this Degree of Heat, whatever Chymiſts or Phyſicians may think to the contrary; and that there is no volatile Alcali, whether ſimple or oily, nor any volatile Acid in the Body; ſo that the modern Phyſic muſt be greatly corrected in theſe Particulars. The fetid Smell of the Urine always increaſes and decreaſes, as the vital Powers increaſe and decreaſe, in an healthy Body; and the more the Body is exerciſed by Labour and Motion, the more this fetid Smell is always increaſed, and *vice verſa*. If any Thing in the animal Juices is to be called Spirit, on Account of its Acrimony, Volatility, Lightneſs and penetrating Virtue, it is neither vinous nor ſaline, but really ariſes from an Oil corrupted, or turned to ſuch a Putrefaction as the Putrefaction of Vegetables.

THE REMAINS OF THE RECENT URINE, AFTER THE PRECEDING PROCESS, ARE NEITHER ACID, NOR ALCALINE, NOR TRULY SAPONACEOUS, BUT SALINE AND FETID.

If the groſs Remainder, after the preceding Diſtillation, be mix'd with any kind of Acid or Alcali, it affords no Sign of Effervеſcence, ſo as to appear either acid or alcaline; nor can it be manifeſted by any other Experiment. It is indeed highly ſharp, of a very ſaline Taſte, and a little bitteriſh, but not alcaline; nor has it an alcaline Odour, but ſmells fetid almoſt as before. If uſed by Fullers and Wool-Scourers, it neither cleanſes nor deterges, and therefore has no ſaponaceous Virtue, which it excellently acquires by putrefying. In this whole Inſpiſſation there appears no Signs either of Chyle or Milk. Nor have I, with the utmoſt Attention, ever diſcovered the leaſt of that Coagulation, which the Lymph and Serum of the Blood always run into by Heat. However treated, it manifeſts nothing of a cheeſy Nature; but conſtantly the more it is inſpiſſated by the Fire, the ſharper and deeper-coloured it becomes; and thus, by various Degrees, it increaſes and changes in Colour, Thickneſs and Acrimony, the longer the Inſpiſſation is continued, ſo as to run through all that Diverſity uſually obſerved in the Urine, under acute and chronical Diſtempers, as a *Bellini* has excellently obſerved. In acute Diſeaſes, the hotter the Fever, and the more it diſſipates the moiſt Parts, the redder, the ſharper, and the thicker the Urine becomes.

REMARKS.

There is therefore naturally no fixed or volatile Alcali in an healthy Body, nor any fixed or volatile Acid in the natural Juices, whilſt they remain ſound; but this Salt is of a particular Nature, which we ſhall hereafter examine, and much leſs volatile than Water, as not riſing even with a boiling Heat. It is ſurpriſing that no nutrimental Matter ſhould ever be contained in this Urine; for there is no Chyle, Milk, Curd, Serum, or Lymph therein, which coagulate by Fire; but Phyſicians juſtly acknowledge theſe as the original Matter of Nutrition. Nothing nutrimental, therefore, is diſcharged from the Body along with the Urine. Thus all the Parts of the Chyle, Milk, Blood, or the Humours thence prepared, that become ſharp, corrupted, ſubtile, unfit for Nutrition, and hurtful to the Body, having performed their Office, are at length ſeparated by the Vital Powers, and, by means of the Kidneys, diſcharged from the Body. Urine, therefore, exhibits the Humours highly changed by the Powers of the Body, even ſo far as never afterwards to prove healthful thereto; and therefore the ſmall Quantity, the Sharpneſs, Colour and Thickneſs of the Urine, afford many juſt Informations to the Phyſician, as indicating the Neceſſity of Water, demonſtrating the Condition and State of the Humours, the Remedies required in Diſeaſes, and what Things are principally deſtructive to the Body, by diſſolving the Texture of the Blood, and how pernicious a great Fluidity is.

RECENT URINE, INSPISSATED TO A FORTIETH PART, AND DISTILLED WITH SAND, AFFORDS AN ALCALINE SPIRIT, AN ALCALINE, VOLATILE SALT, A VERY FETID OIL, AND SALINE FÆCES.

If the Diſtillation of the Urine be continued, till of forty Pounds there remains but one; or if the like recent Urine be ſuffered to exhale in a low, capacious, cylindrical open Veſſel, with an almoſt boiling Heat, till only a fortieth Part remains, there will be found at the Bottom a groſs, thick, blackiſh, ſharp Matter, which being mixed with thrice its Weight of clean Sand, and then diſtilled in a Retort, in a Sand-heat, by gentle Degrees at firſt, and often examining the Liquors that come over, by removing the Receiver, a limpid Water will firſt riſe, as in the preceding Proceſs; and when the Matter begins to be almoſt dry, another limpid Liquor will come over, of a ſharp, fiery alkaline Nature. Continue the Operation ſo long as this riſes, and keep it ſeparate, then cloſely lute on a Receiver, and urge the Matter by Degrees of Fire, upon which white Clouds will long continue to riſe, and unctuous Veins appear, whilſt a ſomewhat oily, yellow Liquor, together with a white, ſolid and alcaline Salt will riſe. At laſt, with the utmoſt Violence of Fire, there comes over a yellow or gold-coloured Oil, and when this ceaſes, a ſaline, feculent Matter remains at the Bottom. The firſt Water is ſcarce alcaline, ſharp, ſaline, or any Way oily, but like the Water of the preceding Proceſs; the ſecond Liquor has a ſharp and manifeſt ſaline Odour, it proves pungent and fiery upon the Tongue, and has a perfect alcaline Taſte; it makes a violent Effervеſcence with all Acids, and when ſaturated with any Acid, concretes therewith into a compound, neutral, half volatile Salt, like Sal Ammoniac, but of a determinate Nature, according to that of the Acid. This Salt therefore is truly alcaline and volatile, like that produced from the Putrefaction of Vegetables. All this appears more in the third unctuous Liquor, which is much more intenſely alcaline, *tho' oily*; *and hence is uſually* called alcaline Spirit, as conſiſting of Water, Salt and Oil, mixed together. The whole Salt is always alcaline, but rendered very ungrateful by the fetid Oil adhering thereto. The Oil which comes over at the ſame time, and afterwards is highly fetid, and infects every Thing with its Odour, ſo as to be intolerable, and not only retains the Smell of Urine, but is ſomewhat ſtercoraceous. The remaining Fæces being calcined in an open Fire, and elixated with Water, afford a true Sea-ſalt, if the Perſon has uſed that Salt in his Food.

REMARKS.

Hence it appears that the Salt of Urine, tho' not alcaline of itſelf, may be rendered ſo by a certain Degree of Heat, and that this urinous Salt is not ammonical, becauſe Sal Ammoniac, tho' volatile with a certain Degree of Heat, yet when ſublimed thereby, never becomes alcaline, but remains compounded, how often ſoever it is ſublimed; whereas the Salt of Urine, tho' likewiſe of a half fixed Nature, and becoming volatile with a certain Degree of Heat, at the ſame time alſo becomes alcaline, and no longer retains the Nature of a compound Salt. It therefore approaches to the Nature of alcaline Salt, and Sal Ammoniac, tho' itſelf be neither of them. Hence alſo we ſee that the Salt, ſaline Spirit, and firſt Oil, are almoſt equally volatile in a ſound State; and that this unctuous Spirit conſiſts of Water, Oil, and Salt, into which it may be commodiouſly reſolved. And hence alſo we underſtand, how by the natural Powers, the mild, white, indolent, inodorous, and unctuous Matter of the Aliment, Chyle, Milk, Fat, and Marrow, may turn into another that is ſharp, yellow, inflammatory, thin and fetid; whence alſo the fetid Smell of the Urine uſually proceeds. Again, we hence learn, that there is no fixed Alcali in the animal Juices; for I never could find a Grain thereof in the largeſt Quantity of the Urine thus treated. And laſtly, that Sea-Salt may enter the Blood, mix therewith, thence paſs into the urinary Veſſels, and yet remain unchanged, ſo as to act through moſt of the Veſſels of the Body, without ſuffering an Alteration by their Re-action. All which Particulars being conſidered, our preſent Experiment, which is owing to *Helmont*, will be found of infinite Uſe in Medicine.

RECENT INSPISSATED URINE, DISTILLED WITH FIXED ALCALI.

Freſh Urine being inſpiſſated as before, pour thereon an equal Quantity of the Oil of Tartar *per deliquium*, or the Solution of Pot-aſhes, and there will inſtantly ariſe a ſharp, alcaline, volatile Vapour, ſuch as uſually proceeds from well-putrefied Urine, when it grows warm. If the Mixture be now immediately diſtilled in a Glaſs Alembic, with a gentle Fire, there comes over a limpid Liquor, running in Veins, which proves ſharp, highly alcaline, and more volatile than Water, and in every reſpect reſembling true and ſtrong Alcali. And when inſtead of the Oil of Tartar, the dry Salt of Tartar is uſed, a dry alcaline Salt often riſes firſt in this Diſtillation. And when the former alkaline Liquor is again diſtilled in a tall Body, with a gentle Fire, the Part that firſt riſes is ſaline, white and alcaline; the Oil remains at the Bottom, along with the fixed Alcali added, as if it was more fixed thereby. Laſtly, when all is become dry, if the Fire be ſtrongly kept up, there likewiſe comes over a fetid, yellow Oil after the Salt.

REMARKS.

This Experiment ſhews the Nature of the animal urinous Salts to be ſuch, that a fixed alcaline Salt can inſtantly change them, like the violent Action of the Fire in the preceding Proceſs. And hence we learn that fixed alcaline Salts being

mixed with the Juices of the Body, will preſently render them ſharp, alcaline, extremely moveable, and more volatile than the Water and Spirit of the Body, communicate a fiery corroſive Nature to the Spirits, and immediately give them a Tendency to Putrefaction. If the Salt and Saline Spirit thus produced be ſeveral times diſtilled over again with a gentle Fire, they at length become as purely alcaline as thoſe prepared from Hartſhorn, or other coſtly Subſtances: When mixed with Acids, they make a violent Efferveſcence, eſpecially if ſhaken together, and by this Means, are ſo mortified and changed as to loſe their Sharpneſs, and all their alcaline or fiery Nature, being thus alſo ſo fixed, as not to prove volatile with the Heat of an healthy Body. They loſe the proper Virtue of acting like volatile Alcalies, eſpecially that of almoſt mortally diſſolving and attenuating the Juices of the Body. And what is more to our Purpoſe, Phyſicians may hence underſtand the ſurprizingly changeable Nature of the Salts of the Body; how variouſly they may alter from their native Diſpoſition; and the proper Effects of each Alteration; and alſo learn the Remedies and Degree of Correction which each requires: All which were known to the Ancients from Experience. Thus in Fevers, attended with an increaſed Heat and Motion, *Hippocrates* allowed only of Things tending to an acid Nature, or actually acid, to be uſed as Food, Drink, or Medicines; and hence we ſee, that fixed Alcalies are deſtructive in the Body, as often as attended with Heat, Motion, a fetid Smell, a Flame-Colour, or ſmall Quantity of the Urine, or the Juices are too much diſſolved; ſo that in ſuch Caſes to exhibit theſe Salts is highly dangerous, eſpecially in the Plague.

RECENT URINE, ESPECIALLY WHEN INSPISSATED, AFFORDS A FIERY SPIRIT THAT IS NOT ALCALINE, UPON THE ADDITION OF QUICK-LIME.

If Quick-Lime be thrown into recent Urine, there inſtantly exhales a ſpontaneous Vapour, which ſtrikes the Noſtrils with an extremely pungent and fiery Senſation; and if it be now directly and gently diſtilled in very cloſe Veſſels, it affords a limpid Water, of an intolerable fiery Odour, like the former, but much more ſharp and volatile. And if, when the Urine is firſt inſpiſſated to a fourth Part, an equal Quantity of Quick-Lime be mixed with the Remainder, the Odour is much ſtronger, and the Spirit obtained by Diſtillation, not to be equalled by any other for its ſharp, fiery, ſubtile, and volatile Nature. After all this Spirit is ſeparated by Diſtillation, and the remaining Maſs afterwards treated by the ſame Operation, it will never afford a ſolid Salt, as in the preceding Proceſs; but always a very fluid ſaline Liquor; and whatever Acid is mixed therewith, it cauſes no Efferveſcence, tho' the fiery Virtue and Volatility are greatly diminiſhed thereby. There is Caution required in this Proceſs; for as ſoon as the Quick-Lime touches the Urine, or the inſpiſſated Matter thereof, it excites a great Ebullition, and a violent Heat, and at the ſame Inſtant the moſt ſharp and volatile Spirit hitherto known ariſes; and, being agitated with the violent Heat, it is put into a furious Motion, ſo that being inadvertently received into the Lungs, it may inſtantly prove highly dangerous, and occaſion an inſtantaneous Inflammation in the tender Veſſels of the Lungs, and directly communicate it to the Blood circulating through them. For if this Spirit be held to the external warm Skin, it immediately makes the Part gangrenate and mortify; but perhaps the whole Thickneſs, between the circulating Blood in the Lungs, and the Air contained in the Veſicles thereof, is not the thouſandth Part of an Inch; but this urinous Spirit, prepared with Quick-Lime, ſuddenly exhales its ſharp Part in the open Air, and leaves a Water behind.

REMARKS.

Hence we may learn the Action of Quick-Lime upon the ſaline urinous Juices of the Body; for when aſſiſted by Heat, and the vital Motion, it preſently generates theſe fiery Spirits, that prove deſtructive to the tender pappy Maſs of the Brain and Nerves; and the hotter, or the more agitated the Body, or the more it is affected with inflammatory Diſorders, the more deſtructive the Uſe hereof. But when the Body abounds with Acid, Water or Phlegm, the prudent Application thereof may be ſometimes of Service. We muſt alſo conſider, that the Lixivium of Quick-Lime has a great Force in correcting, and extricating the muriatic, fixed Salts in the Blood, and fitting them to be eaſily diſcharged; whence it becomes an extraordinary Remedy in that Kind of Scurvy, which principally proceeds from the above-mentioned Cauſes; but in that Kind which proceeds from Putrefaction, and conſiſts in a ſharp Oil and Salt, it proves highly prejudicial. Whence, perhaps, we may, in ſome Meaſure reconcile the Experiments of ſome eminent Phyſicians in *France*, which ſhew the Lixivium of Quick-Lime to be pernicious in that Country; whereas in *Germany* it appears a very advantageous Medicine. But all this holds truer of the Quick-Lime prepared from Stone than of that from Shells. The Particulars hence ariſing ſeem to be theſe. 1. The violent Corroſion which happens in a live Body, upon the Application of Quick-Lime, proceeds more from thoſe fiery ſaline Spirits, which the Lime produces from the Salt, that was not ſharp before, than from the corroſive Body of the Lime itſelf. 2. Hence it may be of Uſe in Diſeaſes proceeding from acid, aqueous, auſtere, viſcous, mucous, and phlegmy Cauſes, where Motion and Stimulation are wanting. 3. On the contrary, it proves hurtful in acute Diſtempers, proceeding from alcaline, bilious, ſaline, putrid, acrimonious, and heating Cauſes, where the Body is dry and ſtrongly agitated by Motion. 4. The mild Salts of the Body may inſtantaneouſly become extremely ſharp and poiſonous, by the bare Admixture of a Thing not ſharp itſelf. 5. That an exceeding ſharp Matter may be produced from healthy Juices, which is neither a Salt, Spirit, nor Oil; for this Liquor cannot, by any Art that I know of, be made to appear in the ſolid Form of a Salt, and can be only obtained inviſible by Means of Water. 6. Theſe Spirits therefore that do not appear to be alcaline, by any Experiments made with Acids, are much ſharper than any Alcali; ſo that there is not any known Thing that yields a ſharper and more odorous Vapour. Whence alſo it appears, how ſuddenly a very different Taſte and Smell may ariſe from the Salt of the Body, which is almoſt inodorous.

THE NATIVE SALT OF URINE.

Take very freſh Urine, diſcharged twelve Hours after eating by a Man in Health, and immediately, by a gentle Fire of two hundred Degrees, evaporate it in a clean Veſſel, till it acquires the Conſiſtence of Cream. Then ſtrain the Liquor hot through a Flannel Bag, that the viſcous Oils may be ſomewhat kept back and ſeparated, which the more exactly it is done, the better. Set a large Quantity of this inſpiſſated Liquor, in a tall, cylindrical, glaſs Veſſel, tied over with Paper in a cool Place, for a Year; during which Time, a ſaline, ſolid, hard, brown, and ſomewhat tranſparent Maſs will concrete to the Bottom thereof; and a thick, black, unctuous Liquor float above it, as ſeparated and excluded from the Salt. Pour off the Liquor, and putting the ſaline Maſs into another Veſſel, add very cold Water thereto, and ſhake it a little therein, to cleanſe it from its oily Foulneſs, which is eaſily done, becauſe the Matter does not readily diſſolve in cold Water. Let this ſaline Maſs be preſerved under the Title of the native Salt of Urine. If this Salt be diſſolved in Water, and ſeveral Times ſtrained, till the Solution becomes limpid, and then exhaled to a Pellicle in a clean Glaſs, and ſet to reſt in a cool Place, it ſhoots into ſaline Glebes, of its own peculiar Kind, very different from any other Salt, tho' ſomewhat reſembling the Cryſtals of Sugar, in Figure and Hardneſs. They are not fetid or alcaline, but extremely volatile; and this is the purified Salt of Urine.

REMARKS.

This Experiment excellently ſhews Phyſicians the Nature of thoſe Salts, which in an healthy Body are very ſharp, and greatly inclining to an alcaline Nature, yet not really alcaline; and therefore require to be quickly diſcharged by the vital Powers, to which they however owe their Origin. And hence Phyſicians may know, that the other Salts contained in the other Juices, are much leſs ſharp or alcaline. Theſe Salts are generated in the human Body alone, from the Meat, Drink, and Sea-Salt taken in and changed. There is Sea-Salt contained herein, but not alone. It is a ſaponaceous Salt, but not very unctuous. It is highly diuretic, if drank diluted with Water, and ſudorific with a proper Regimen. It has ſuch extraordinary Effects upon Metals, that ſome have thence promiſed themſelves Wonders. All the fat Matter, which remains upon ſtraining, and cleanſing the inſpiſſated Urine, is, when dried by a gentle Fire, excellent for the producing of Phoſphorus; for which End it may be preſerved. The Experiment alſo ſhews, that the Salt remaining in the Urine, thus inſpiſſated, will not putrify or grow alcaline, ſo as to become volatile and eaſily fly off, tho' they are otherwiſe ſo eaſily changed. It ſhould be conſidered what Share this Salt has in producing the Stone of the Bladder or Kidneys.

URINE, BY DIGESTION, TURNS ALCALINE, AND CHANGES ITS COLOUR, TASTE, ODOUR, AND VIRTUES.

If ſuch Urine as was deſcribed in the firſt Proceſs, be kept in an open Veſſel of Glaſs, Earth, Wood, or Metal, in an Air of thirty three Degrees of Warmth, it begins to ſmell fetid, putrely, and change its Straw Colour for a dusky

,brown, depoſiting groſs Fæces, and thus in a few Days acquiring an alcaline lixivious Nature, and at the ſame time ſtriking a ſtony Cruſt on all the Sides of the Veſſel. The hotter the Air is, the ſtronger and quicker the Change of the Urine is made; whence in the Summer-time, eſpecially when the Weather is hot, all this happens in a greater Degree. To diſcover how far this changeable Nature would reach, I filled a Bottle with natural recent Urine, and corking it cloſe, ſet it in a moderately warm Place; and after three Months, I found it changed in this cloſe Veſſel, as is deſcribed in the preceding Caſe. And herein the Change principally conſiſts; the recent Urine of a Man in Health is of a ſtraw Colour, it daily proceeds through ſucceſſive Changes, till at length it ends in a deep brown; and the more it is putrified, the darker the Colour. And the ſame Thing is obſervable in the Urine of Perſons under a Fever; the State of the Juices being learnt from the Colour of the Water. Recent Urine ſmells ungrateful, though not alcaline; but digeſted Urine has a manifeſtly fetid, volatile, alcaline Odour, very different from the other. Recent Urine is of a bitter, ſaline Taſte; but digeſted Urine putrid, ſharp, alcaline, and perfectly lixivious. Recent Urine affords no Signs of containing an Alcali; but digeſted Urine makes an Ebullition, and a violent Effervеſcence, upon mixing with any Acid, and in every other Trial, manifeſts a true alcaline Nature. Recent Urine has no ſaponacious ſcouring Virtue; but digeſted putrified Urine is uſed by Scourers and Dyers, as a ſharp Lie, that cleanſes foul Wool, Silk, and the like, after the manner of fix'd Alcalies: And as theſe Changes happen, with a ſmall Degree of Heat in a cloſe Veſſel, which every one may be eaſily ſatisfied of by Trial, it is in vain for Chemiſts to deny this Property in Urine.

REMARKS.

We are here to conſider, that there is ſeparated from the Body, by the urinary Paſſages, a Water containing Salts and Oils, approaching to a State of Putrefaction; nor do we find in all the Body, another Fluid that is ſo eaſily changed by ſuch a Digeſtion in cloſe Veſſels. Urine, therefore, which is deſtin'd for Excretion, cleanſes the Blood from theſe noxious, putrid Subſtances; and, therefore, if retain'd through any Diſtemper, it produces mortal Effects, as being ſoon rendered ſharper by the Heat of the Body, and thence preſently intolerable to the finer Veſſels, and diſſolving to the Humours by a pernicious Relaxation. And as it thus eaſily and ſuddenly acquires theſe new Properties in a cloſe Veſſel, with a moderate Heat, we are ſhewn that the Body neither produces Vinegar, nor inflammable Spirit from what it takes in, and conſequently does not act by Fermentation, but introduces the true Change of a putrified Subſtance, and therefore in its Effect, approaches nearer to the Nature of the Putrefaction of Vegetables; for if bare Stagnation can occaſion this Change of the Urine, how greatly muſt it be diſpoſed to a true Putrefaction? And hence we ſee how great Neceſſity there is of Water, Acids, and ſaline Matters in thoſe Perſons who live in hot Climates, and accuſtom themſelves to daily Labour and Exerciſe; for by Meats, Drinks, and Sauces of this Kind, too great a Tendency to Putrefaction is prevented. Hence alſo the daily Neceſſity of a mild, ſomewhat acid, and a new Chyle, for ſheathing the Acrimony produced in the Blood. Hence alſo it appears, that in twenty-four Hours the neceſſary Utility and Service of this new Chyle vaniſhes; and that freſh Aſſiſtance is likewiſe required from the ſame Means. In burning Fevers, therefore, tart, acid, and mild Aliments, like Chyle, are extremely neceſſary; great Abſtinence being in theſe Caſes highly prejudicial. Hence it is that Barley Ptiſans, with Vinegar and Honey, are here ſo ſerviceable, as *Hippocrates* prudently inculcates, in his incomparable Book concerning the Diet in acute Diſeaſes. The Phyſician alſo, upon examining the Urine, by means of theſe Experiments, may learn many uſeful Particulars, with regard to the Change of the Oil and Salt thereof; and perceive that a true Stone may be generated from the Urine of a Man in Health, even by Reſt, and while the Urine putrifies, or grows alcaline; and therefore that Attenuation, Alcalies and Putrefaction, do not prevent the Origin of the Stone, ſince it may be generated and not diſſolved even in putrified Urine. Hence, therefore, as Tartar is generated in the beſt Wine, ſo is the Stone generated, and not diſſolved, in the Urine elaborated by the vital Powers: Therefore, volatile alcaline Salts are in vain given to prevent the Generation of the Stone. The following Experiment I have ſeen with Horror. Upon filling a clean Glaſs Bottle with the recent Urine of a healthy Perſon, and ſetting it by for ſome time, then pouring out the putrified Liquor for Diſtillation, there was a ſtony Cruſt all round the Inſide of the Glaſs. Without waſhing this off, I filled it with freſh Urine, ſet it by as before, and afterwards emptied it. And by repeating this ſeveral Times, I at length found the whole Surface of the Glaſs cruſted over with the Matter of the Stone. This Production of a ſtony Matter ſeems very deſtructive, though neceſſary to the Body. It may perhaps ſeem ſtrange, why the Body ſhould not therefore putrify by its own vital Heat and Motion, ſince it ſo ſoon putrifies the wholeſomeſt Juices; and ſince dead Carcaſes, expoſed in Air heated to eighty Degrees, in a few Hours putrify, reſolve away, and fly into Air, leaving only the Bones behind: But Chemiſtry ſupplies us with this Anſwer, that ſuch a Putrefaction is prevented by the Meat, Drink, Sauces, Air, and ſometimes the Medicines uſed, which reſiſt Putrefaction; otherwiſe, in burning Fevers, the whole Structure of the Body would preſently be diſſolved by Putrefaction.

DIGESTED URINE AFFORDS BY DISTILLATION AN ALCALINE SPIRIT, A FETID OIL, A VOLATILE, ALCALINE SALT, PHOSPHORUS AND SEA-SALTS.

Take Urine digeſted according to the foregoing Proceſs, diſtil it, with a gentle Fire, in a low Glaſs Body; there firſt ariſe Veins of Liquor running in the Form of unctuous Spirits. The Receiver being changed, and the Fire a little encreaſed, there follow dewy Drops, reſembling Water; and this Water may be accurately ſeparated till the Matter remains almoſt dry, which again being urged by Degrees, and at length by a ſtrong Fire, will afford a yellow and very fetid Oil, along with ſomething ſaline; black Fæces will remain behind, which, when burnt in an open Fire, become a white Calx, that with Water reſolves into Sea-ſalt, and a fixed, inſipid, ſubtile Earth. The firſt Water is fetid, ſharp, fiery, perfectly alcaline, and makes a violent Effervеſcence with Acids. If this be diſtilled in a tall Veſſel, by a gentle Fire, it affords a white, ſolid, truly alcaline Salt; and leaves a Water of an ungrateful Smell and Taſte behind. When the Water that came over ſecond is long diſtilled in a tall Veſſel, with a gentle Fire, it affords ſomewhat of the former Spirit; which being carefully ſeparated, and the remaining Water diſtilled in a clean Veſſel, it affords a Liquor which *Helmont* recommends, in his Treatiſe on the Stone, for an admirable Lithontriptic. There here appears no fixed Alcaline Salt, but a true Sea-ſalt, if the Perſon uſed much thereof; but when I deſire to obtain a large Quantity of the Salt, I uſually proceed thus.

I put a hundred Weight of Urine into a large low Veſſel that widens upwards, and inſpiſſate by boiling, with Care to prevent the unctuous Matter from boiling over; and being left, till the whole acquires the Conſiſtence of Honey, I put a large Quantity of this into an open cylindrical Glaſs, and expoſe it for ſome Months in a warm Room, ſo that it may be well putrefied. I afterwards put the Glaſs into an Iron Pot, to the Mouth whereof a large earthen Still-head may be commodiouſly fitted, and cloſely luted; the Head has a long Pipe, to which I apply a capacious Receiver, then raiſe the Fire by Degrees, upon which an incredible Quantity of a white alcaline Salt ariſes, next a yellow Oil that fouls the former Salt, and with it another Salt ſomewhat more fixed. I urge the Fire till the Pot begins to grow red hot, at which Time the Oil and the laſt Salt come over. Then ſuffering the Iron Pot to cool a little, while the fixed Matter continues ſufficiently hot, I take away the Receiver, and put up all that was raiſed into Glaſs Bottles, and ſtop them cloſe. This afterwards reſolves into Spirit, Salt, and Oil, as the former. If what now remains at the Bottom be mixed with twice or thrice its Weight of Wood-Coal, and then put into little coated Retorts, and urged with the utmoſt Violence of Fire for ſixteen Hours, into Receivers filled with Water, and ſo placed as to bury the Necks of the Retorts under Water, little blue Maſſes of Matter will at length come over, and fall to the Bottom of the Receivers, whence they are collected, ſo as to be gathered together under Water, in a ſmall Veſſel; which being ſet over the Fire, ſo as to be very hot, the Matter of the Phoſphorus melts without diſſolving in the hot Water, and runs into one Maſs, like melted Wax; and may be afterwards preſerved for twenty Years, or more, under Water, without loſing its Virtue. But if another Part be taken of the Maſs, as it remains in the Pot, and calcined in an open Fire to a white Calx, this Calx, when put into Water, communicates a ſaline Matter thereto; and which, when reduced, proves to be true Sea-ſalt, that remained thus unchanged through all the Digeſtions of the Body, and even after ſuch a long continued Putrefaction and Diſtillation. That it is a true Sea ſalt, appears manifeſt from the Taſte, but more particularly, becauſe, when mixed with *Aqua fortis*, it diſſolves Gold; ſo that there is no fixed alcaline Salt found even in this Urine; but whatever it contains of ſaline, is either of the volatile Kind, or Sea-ſalt.

RE-

REMARKS.

This is the true Analyſis of Urine after Putrefaction, where it affords all the ſame Matters as that which is diſtilled freſh, though with a leſs Heat and in an inverted Order. Putrefaction renders the Salts more volatile than Water, and makes thoſe alcaline which were not alcaline before; it renders the Oil ſharper, more fetid, and more volatile, yet produces no inflammable Spirit, no fix'd or volatile Acid, nor any fix'd Alcali. Yet theſe two Salts appear differently volatile; the firſt whereof eaſily riſes and ſeparates almoſt pure; the other with more Difficulty, ſlower, and mixed with a copious Oil, not eaſily to be ſeparated from it, and requires a large, and in part the ſtrongeſt Fire to raiſe it. I once urged the prepared Fæces of Urine, with the moſt violent Fire for the making of Phoſphorus, and was ſurprized to find how long this ſaline Matter continued to come over, after having ſo long ſuffered the Violence of a former Fire; but this Salt was ſtrangely denſe, yellow, fetid, and fix'd to the Sides of the Retort. All Acids, therefore, are here changed into a neutral, ſaline Subſtance, by the vital Powers; yet this neutral Salt becomes truly alcaline by Putrefaction, and more volatile than any hitherto known, even than Alcohol itſelf. This Putrefaction volatilizes all the ſaline Matters of Animals and Vegetables, but can neither convert Sea-ſalt into an Alcali, or render it volatile. Some eminent Chemiſts have ſaid, that an Acid might, by the Force of Fire, be drawn from the Fæces of Urine, remaining after its Diſtillation: And I have found this true, where common Salt was largely uſed by the Perſon, and not changed, as was above obſerved, but remaining plentifully in the Fæces: For being thus mixed in a large Proportion of Earth, the extreme Violence of the Fire drives over the Acid of the Salt, which has thus been haſtily taken for the Acid of the natural Juices: Yet it muſt be acknowledg'd that Phoſphorus ſpontaneouſly reſolves into an Acid by the Air, not greatly differing from the Oil, or acid Spirits of Vitriol or Sulphur; whence it makes a kind of Compound Body with Quickſilver. But whence this Acid ſhould proceed I am at a Loſs to know, as alſo of what Nature it is. Certainly it ſuits neither with Animals or Vegetables; perhaps, Alum might be added in the Preparation; for thus it may be obtained to Advantage; and the acid Spirit of Alum is very like that of Vitriol. On the other hand, it has appeared by Experiments, that Fowls feeding upon Vegetables inclined to Acidity, and drinking nothing but Water, while they were cooped up, and being afterwards calcined with an open Fire, together with all their Excrement, afforded Fæces that contained nothing either of acid, or of an alcaline Nature. If a Spirit highly ſaturated with volatile, alcaline Salt be highly rectified, it becomes limpid; but if afterwards long kept, it changes brown, and generally depoſits ſomething terreſtrial to the Bottom and Sides of the Veſſel. Let it be examin'd whether this is not that volatile Earth, which riſes with the fiſt Spirit of putrefied Urine, that tarniſhes the Glaſs ſo as not to be got off again but by the other ſubſequent Spirit, which, though ſcarcely ſaline, ſpontaneouſly diſſolves it; of which *Helmont* treats ſo largely in his noble Book of the Stone. This deſerves to be thought of and tried, as being an eaſy Thing that has its Uſe. Certainly Alcalies rather generate the Stone; but if the ſecond Liquor, which is not alkaline, diſſolves the Stone, then Urine will contain both the Matter of the Stone and its Solvent. Sea-ſalt, therefore, does not generate the Stone, but rather reſolves it, as hindering by its Saltneſs, the Tendency of the Humours to an alcaline Nature and Putrefaction. Whence *Helmont* conceives, that Vinegar, Sea ſalt, and Sulphur, were the great antipeſtilential Remedies of *Hippocrates*, being uſed along with fumigated Wine; whence the Adepts declare, that Nature has lodged abſolute Perfection in Salt. It does not however commodiouſly diſſolve the Stone formed in the Urine, or the Concretions of the Gout.

Dr. *Langriſh*, in his modern Theory and Practice of Phyſic, ſays, That the Kidneys are Organs deſigned by Nature to through out of the Body a recrementitious Liquor, which in Health is ſtraw-coloured, or of a pale Yellow, and contains little or no Sediment, or feculent Matter; being in effect a Lixivium, in which a Portion of the animal Salts and Oil is diſſolved and waſhed away. If, therefore, (as we have Reaſon to believe) the ſecretory Ducts of the Kidneys are more than ordinarily contracted, in an acute Fever, either by the ſharp, acrid Salts and Oil ſtimulating them as the paſs along, or elſe by the general Tenſion of the Veſſels at that Time; or if the Union or Attraction between the ſerous and globular Parts of the Blood is ſo ſtrong as not to be ſeparated in the Renal Tubuli, we have a manifeſt Reaſon for the ſmall Quantity of Urine.

Another Cauſe, indeed, may be the Velocity of the Fluids; for a ſtrong and ſwift Circulation is an Hindrance to all Secretions, by reaſon they are perform'd by lateral Branches going off at or near Right Angles; and conſequently a ſwift Circulation along or parallel to the Axis, carries along with it what ſhould be laterally ſecerned.

As to the Colour of the Urine, that depends upon the Quantity of oily and ſulphureous Particles wherewith it is impregnated; it being well known, that Oil or Sulphur is the Cauſe of all Colours in Liquors; ſince neither pure Salt, pure Water, nor pure Earth, can communicate any Colour at all. Add to this, that Oil gives the deeper Colour, the more it is attenuated and exalted by Heat and Motion. And again, when the increaſed Heat of the Body hath exalted the moſt fluid, aqueous Particles of the Blood, the Urine may become higher coloured, or intenſely red, by the Proximity of the ſulphureous Particles.

Hence we ſometimes meet with Urine, ſo ſaturated with oily, ſaline, and terrene Particles, as to be a perfect Lixivium; and at other times, the Salts and Oil are not determined to the Bladder along with the Urine; that is, when the Fibres of the Kidneys are over and above contracted, or the Salts and Oil are not attenuated and divided enough, to ſuit the Orifices of the ſecerning Ducts, the Urine is as limpid and clear as common Water. The former of theſe argues an inflammatory Diſpoſition of ſome of the inner Viſcera; and the latter threatens Deliria, and Convulſions.

The rank fetid Smell, which often attends the Urine of Perſons in ardent Fevers, proceeds from the Salts being volatilized and rendered alcaline, and the Oil tending towards Putrefaction; all which is repugnant to the natural State of the Fluids.

Towards the Criſes of Fevers, when the ſaline, ſulphureous, and terrene Particles, are attenuated and ground fine enough to paſs through the Renal Tubuli, the Urine is loaded with Contents, and lets fall a thick Hypoſtaſis, or turbid Sediment, after it has ſtood for ſome time. Since, therefore, the Urine, by its ſeveral Contents and Appearances, furniſhes us with Signs as well diagnoſtic as prognoſtic, it ought to be inſpected every Day, in order to deduce our curative Indications, or to make our medicinal Prediction with greater Certainty; either from the Cloud at the Top, the Eneoræma ſuſpended as it were the Middle, or the Hypoſtaſis or Sedimentum ſubſided to the Bottom: The laſt of which is the beſt Indication of a kindly and regular Concoction.

Thus by daily inſpecting the Urine, we are taught the State and Progreſs of the Diſeaſe; and thereby enabled not only to make our Prediction, but we are, alſo, greatly directed thereby in our medicinal Practice. *Hippocrates* laid great Streſs upon his Obſervations on the Urine. And our Countryman *Willis* is ſo ſanguine as to tell us, that the Acidulæ or *Spaw* Waters do not more certainly ſhew the Nature of the hidden Mine, through which they are ſtrained, than Urines give Teſtification of the divers Sorts of Dyſcraſies of our Bodies and their Habitudes.

If, therefore, a bare Inſpection of Urine is of ſuch Advantage towards inveſtigating the Nature, State, Progreſs, and Cure of Diſeaſes; moſt certainly the natural Hiſtory of it, or a more curious Search into the Contents of the Urine, in every Period of the Diſeaſe, will be of more moment in diſcovering the ſeveral Dyſcraſies of the Blood, and in indicating the Method of Cure, than what we can meet with in the Urinal only. For this Reaſon, I thought it worth while to make the following Experiments, that by an exact Analyſis we might ſee the different Contents of the Urine, and the various Proportions of its Principles.

A CHYMICAL ANALYSIS OF THE URINE, BOTH IN HEALTH AND IN ACUTE FEVERS.

EXPERIMENT I.

I took all the Urine that was made in the Space of twenty-four Hours, by a Man, thirty-five Years of Age, in perfect Health, and of a regular Life. I weighed out two Pound, and diſtilled it; by which means I gained

		Ounc.	Dr.	Gr.
1. Lymph — — —	30	7	2	
2. Volatile Salt — —		2	18	
3. Oil — — —			32	
4. Cap. Mort. before Calcination —		3	17	
5. Cap. Mort. after Calcination —		1	43	
6. Fixed Salt — — —			32	

The greateſt Part of the Lymph was pellucid, inſipid, and inodorous, and exhibited no Signs of an Acid or an Alcali; but the latter Part was very ſtrong and offenſive, and fermented violently with Oil of Vitriol, made a white Precipitate

with Solution of Sublimate, and turned Syrup of Violets green.

When the volatile Salt firſt began to riſe, it ſhot all over the Glaſs-head and Reciplent into moſt beautiful Cryſtals; ſome of which reſembled fine Boughs or Feathers; while others radiating from a Point or Centre, formed Stars or Roſes of various Sizes.

When the volatile Salt was mixed with an acid, a ſtinking Vapour aroſe, which ſmelt like a naſty Corner where People have made Water for a long time.

I repeated this Experiment three Times, but as there was no material Alteration either in the Quantity or Quality of any of the Principles, it would be encroaching on the Patience of the Reader to inſert thoſe Proceſſes.

Experiment II.

A young Lad, ten Years old, being ſeized with an acute Fever, attended with a Phrenzy, Subſultuſes, and many other dangerous Symptoms, it continued till the eighth Day; on which moderate Sweats broke forth, and the Urine let fall a vaſt Hypoſtaſis.

All the Urine which was made on the eighth and ninth Days, being ſaved by my Order, it amounted exactly to two Pounds; which being committed to the Still, it afforded,

	Ounc.	Dr.	Gr.
1. Lymph — — —	30	2	
2. Volatile Salt — — —		5	46
3. Oil — — —		1	23
4. Cap. Mort. before Calcination —		5	4
5. Cap. Mort. after Calcination —		1	56
6. Fixed Salt — — —			44

Hence we may not only obſerve a great Difference between the Contents of healthy Urine, and that made at the Criſis of a Fever; but we plainly ſee the Reaſon of the vaſt Advantages which generally accrue when the Urine is loaded with Contents, and lets fall a thick and turbid Sediment. For we have good Reaſon to believe, from this Experiment, that the greateſt Part of the Hypoſtaſis conſiſted of ſaline and ſulphureous Particles, which, while in the Blood, irritated the Veſſels, and increaſed the Fever.

The Lymph alſo ſeemed to be much ſtronger in this than in the former Experiment; and as it contained more volatile Salt and Oil, it fermented more violently, and ſmelt ſtronger when mixed with Oil of Vitriol.

Experiment III.

A young Woman, ſeventeen Years of Age, lay ill of an ardent Fever, and from the tenth to the fifteenth Day, the Urine came away involuntary; ſo that none could be ſaved, except about a Spoonful of limpid clear Water on the twelfth Day, at which time ſhe was raving, gather'd up the Bed-Clothes, catched at imaginary Flies, and the like. On the thirteenth and fourteenth ſhe lay comatoſe. The fifteenth ſhe raved again, had ſtrong Subſultuſes, and a black parched Tongue. On this and the next Day, we ſaved eight Ounces of Urine, which was ſomething deeper coloured than a Citron, ſmelt ſtrong, and had a very thin bright Cloud ſwimming in the middle. This Urine being diſtilled, we procured,

	Ounc.	Dr.	Gr.
1. Lymph — —	7	5	
2. Volatile Salt — —			40
3. Oil — — —			32
4. Cap. Mort. before Calcination —		1	6
5. Cap. Mort. after Calcination —			21
6. Fixed Salt — —			4

Experiment IV.

The dreadful Symptoms which attended this poor young Woman on the fifteenth and ſixteenth Days, were ſomething alleviated on the ſeventeenth, by a gentle breathing Sweat; but the Remiſſion was very ſhort, a *Rigor* ſucceeded, and the Fever ſeemed to return with greater Violence than ever. All that Night ſhe raved much. The next Day, the eighteenth, I found her delirious, with frequent Catchings of the Tendons, and her Pulſe ſo extremely quick as ſcarce to be counted.

Nine Ounces of Urine being ſaved on the ſeventeenth and eighteenth Days, I diſtilled eight Ounces of it, and obtained,

	Ounc.	Dr.	Gr.
1. Lymph — — —	7	4	45
2. Volatile Salt — —			48
3. Oil — — —			34
4. Caput Mort. before Calcination —		1	10
5. Caput Mort. after Calcination —			23
6. Fixed Salt — —			3

It may be proper to obſerve, that about four Ounces of this Urine, which was made during the little Remiſſion of the Fever, was highly red at firſt; afterwards it grew thick and cloudy, and the next Morning it had a laudable *Hypoſtaſis* ſubſided to the Bottom. The other Part was much the ſame with that of the former Proceſs.

Having one Ounce of Urine to ſpare, and it ſmelling exceedingly rancid and ſtrong, though the Glaſſes were very clean in which it was contained, I thought it worth while to try if I could poſſibly diſcover any alcaline Property in this Urine, before the Fire had any ſhare in it; and accordingly I divided it into four Parts; to the firſt I let fall ſome Solution of Sublimate, which made no Alteration in it; to the ſecond I dropt in ſome Solution of Alum, which alſo lay very quiet; to the third I added Oil of Vitriol, which manifeſtly gathered together, and collected the groſſer, thicker Contents of the Urine (which, by ſhaking the Bottle before we weighed out what was diſtilled, were equally ſcattered all over, ſo as to render it of an even turbid Colour) into little Rags, and left the Interſtices clear. With the fourth I mixed Oil of Tartar, which immediately diſperſed the Thickneſs or Muddineſs, and rendered it clear, and almoſt of a Straw-colour.

Hence it is evident, that though the Urine was not alcaline enough to raiſe a viſible Fermentation with Acids; yet as the ſaline and oleaginous Particles were undoubtedly attracted and collected together by Oil of Vitriol, and repelled and diſperſed by Oil of Tartar, we may reaſonably conclude, that the prodigious Heat of the Body had exalted the Animal Salts and Oil to an alcaleſcent State. For this was the moſt intenſe Fever I ever met with; and as the Heat had been continued many Days, I am perſuaded it might be the Cauſe of thoſe Phænomena.

Experiment V.

On the 19th Day of this young Woman's Illneſs, we had a Remiſſion for four Hours; during which Time ſhe came to her Senſes, drank plentifully; her Tendons were quiet, her Pulſe regular, in compariſon to what they had been; and by the Aſſiſtance of a Clyſter we procured two Stools. In the Evening the Rigor returned, though not with ſo much Vehemence as on the 17th. The Fever, Delirium, Subſultus Tendinum, *&c.* ſoon ſucceeded; ſo that the Night was paſſed with great Inquietude. On the 20th in the Morning, ſhe had two Hours Sleep, which greatly refreſhed her, and ſlackened the Pulſe both in its Hardneſs and Velocity. She now began to ſpit a good deal of frothy Matter; her Skin felt ſmoother and ſofter than it had done before; and the Urine on both theſe Days was loaded with Contents, and let fall a very thick Hypoſtaſis. Eight Ounces of this Urine afforded,

	Ounc.	Dr.	Gr.
1. Lymph — — —	7	3	32
2. Volatile Salt — —		1	38
3. Oil — —			53
4. Cap. Mort. before Calcination —		1	12
5. Cap. Mort. after Calcination —			26
6. Fixed Salt — — —			5½

Having mentioned in the former Experiment, that Oil of Vitriol plainly collected, and Oil of Tartar as manifeſtly diſperſed the turbid Parts of the Urine, I was induced to try it again with ſome of this Urine before Diſtillation; becauſe it ſeemed to be more impregnated with volatile Salts and Oil; and conſequently it might exhibit the Phænomena more plainly. Accordingly I dropt a few Drops of Oil of Vitriol into an Ounce of it; from whence a fine white Froth aroſe to the Top of the Mixture, while the groſſer Contents run together, and after ſome time ſubſided to the Bottom. The Ferment, indeed, was but weak; however, it was enough to diſcover, to any unprejudiced Perſon, an alcaline Matter in the Urine. I muſt confeſs, indeed, I have repeated this Experiment a great many times on the Urine of other Perſons in ardent Fevers, and never could obſerve the ſame Appearances; but, as I ſaid before, ſince all the Veſſels which received this Urine were very clean, and ſince the Heat was moſt extreme, as well as of very long Continuance, I am poſitively ſure the Phænomena proceeded from an alcaline Diſpoſition in the Urine.

Experiment VI.

On the twentieth Night this young Woman ſlept well. The next Morning I found her greatly refreſhed, though not free from the Fever. All that Day, and the next, ſhe continued mending; ſhe ſpit much, had little breathing Sweats, and a Multitude of Contents in the Urine. All the Urine ſhe made on the 21ſt and 22d Days, being mixed together, and ſhook, in order to diſperſe the Contents equally, I diſtilled eight Ounces, and obtained,

1. Lymph

	Ounc.	Dr.	Gr.
1. Lymph — — —	7	3	20
2. Volatile Salt — —		1	42
3. Oil — — —		1	8
4. Cap. Mort. before Calcination —			54
5. Cap. Mort. after Calcination —			29
6. Fixed Salt — — —			4

The critical Evacuations by Sweat, Urine, and Spit, continuing on the 23d and 24th Days, my Patient was paſt all Danger; ſhe ſlept quietly, and only complained of great Laſſitude and Faintneſs: But as the Urine on theſe two Days continued to be very turbid and thick, I was invited to purſue my Enquiry, and from eight Ounces procured,

	Ounc.	Dr.	Gr.
1. Lymph — —	7	4	5
2. Volatile Salt — —		1	15
3. Oil — — —			56
4. Cap. Mort. before Calcination —			58
5. Cap. Mort. after Calcination —			26
6. Fixed Salt — —			3

The Oil and latter Part of the Phlegm, or Spirit, which came over in thit Proceſs, being left in the Recipient all Night, I found next Morning ſeveral large and beautiful Cryſtals ſhot from them, ſome of which were as large, and much reſembled the Cryſtal Stones uſed for Mourning Rings.

From theſe five laſt Experiments we may plainly obſerve, that the Urine became more and more impregnated with ſaline and ſulphureous Parts, in Proportion to the Abatement of the bad Symptoms; till at the Criſis it contained more than double the Quantity it did at firſt. Hence the ſeveral Organs of the Body were vaſtly relieved, their Tenſion was abated, the Blood grew polite and ſmooth, and the Coheſion between the ſeveral Orders of Blood Globules became leſs and leſs, by a conſtant Diminution of the Quantity of ſtrongly attracting, acrid, irritating, ſaline and ſulphureous Particles.

EXPERIMENT VIII.

A young Man on the ſixth Day of an acute Fever, made exceeding limpid, clear, and pale Urine, which was ſoon followed with a Phrenzy, Subſultus Tendinum, and other dangerous Symptoms. From eight Ounces of this Urine I obtained

	Ounc.	Dr.	Gr.
1. Lymph — — —	7	5	48
2. Volatile Salt — —			12
3. Oil — — —			19
4. Cap. Mort. before Calcination —			44
5. Cap. Mort. after Calcination —			23
6. Fixed Salt — —			2½

It is an old Obſervation, founded on Experience, that if the Urine changes ſuddenly from a deeper Colour to a crude Paleneſs, without a Sediment, towards the Height of a Fever, it is the Fore-runner of ſome fatal Metaſtaſis, as of Deliria, Convulſions, and the like. And here, in this Experiment, we have plain Demonſtration of the Cauſe of it; becauſe the animal Salts or Oils are not determined to the Bladder, along with the Urine, but are accumulated in the Blood and Lymph, and generate Obſtructions.

EXPERIMENT IX.

On the tenth Day the Urine of this young Man grew exceedingly turbid, with an even white Hypoſtaſis at the Bottom, and all the bad Symptoms vaniſhed. Eight Ounces of this Urine afforded,

	Ounc.	Dr.	Gr.
1. Lymph — —	7	3	33
2. Volatile Salt — —		1	45
3. Oil — — —		1	6
4. Cap. Mort. before Calcination —			48
5. Cap. Mort. after Calcination —			22
6. Fixed Salt — —			6

Here again we have manifeſt Proof of what vaſt Advantage it is to the animal Oeconomy, to have the Salts and Oils properly attenuated, diluted, and drained off from the Blood, by the ſecerning Tubuli of the Kidneys.

Thus, in the moſt natural Way of analyſing the Urine, without Fermentation or Putrefaction, or without the Addition of any ſuſpicious Analyſer, we have ſeparated the ſeveral conſtitutive Parts of Urine; whereby we have evidently demonſtrated, that the Urine in Fevers abounds more with ſaline and ſulphureous Particles than it does in Health; and eſpecially towards the Criſis, when the Salts and Oils are ſufficiently attenuated, ground, and comminuted, it is loaded with a Multitude of Contents, which gives great Relief to

the Sick: But when it is pellucid, pale and clear, and continues ſo for ſome Time, it is a very dangerous Phenomenon, and requires the utmoſt Skill and Diligence to remove it. I ſhall only add, that the fixed Salt in all theſe Experiments, appeared, by the ſtricteſt Trials with Oil of Vitriol, and a Solution of Silver, to be Sea-Salt.

RENOVATIO. Renovation, in Chemiſtry, is defined, the Reſtoration of a mineral Body to a perfect State, from one which is imperfect. It is alſo uſed, with reſpect to the Body, in the ſame Senſe.

RENUANS MUSCULUS. A Name for the *Rectus Anticus Brevis.*

RENUNCIATIO, Renunciation; that is the Report of a Phyſician or Surgeon to a Magiſtrate upon an Inqueſt, with reſpect to the Event of a Wound, or Poiſon, or relative to contagious Diſtempers.

REPANDATIO. The ſame as LORDOSIS.

REPELLENTIA. Repellent Medicines. See INFLAMMATIO.

REPERCUTIENTIA. The ſame as REPELLENTIA.

REPLETIO. Repletion, Satiety, or a *Plethora.*

REPOSITIO. The Reduction of a luxated, or fractur'd Limb.

REPRIMENTIA. Remedies which repel by their Aſtringency.

REPULSORIA. The ſame as REPELLENTIA.

REPURGATIO. The ſame as ANACATHARSIS.

RES NATURALES. The Naturals.

In every Perſon, ſays *Boerhaave*, however diſordered, Life, the Cauſe of Life, and its Effects, remain in ſome Degree. Theſe, ſays he, are called the Naturals, or Things according to Nature, and ſometimes ſimply Nature.

RES NON NATURALES. See CAUSA.

RES PRÆTER NATURAM. Diſeaſes, their Cauſes, and Symptoms, or Effects, are thus called by the Writers of Inſtitutes.

RESEDA.

The Characters are;

The Leaves are pinnated; it hath a polypetalous anomalous Flower, compoſed of ſeveral diſſimilar Petals, out of whoſe Cup ariſes the Pointal, which afterwards becomes a membranaceous Fruit, for the moſt Part three or four corner'd, oblong, and as it were cylindraceous, pregnant with roundiſh Seeds.

Boerhaave mentions ſix Species of this Plant; which are;

1. Reſeda; maxima. *C. B. P.* 100.

2. Reſeda; alba. *J. B.* 3. 467.

3. Reſeda; vulgaris. *C. B. P.* 100. *Raii Hiſt.* 2. 1053. *Synop.* 3. 366. *Tourn. Inſt.* 423. *Boerh. Ind. A.* 251. *Reſeda*, Offic. *Reſeda Plinii*, Ger. 226. Emac. 277. *Reſeda lutea*, J. B. 3. 467. *Reſeda minor ſeu vulgaris*, Park. Theat. 823. BASE ROCKET.

It grows in chalky Soils, and flowers in *June* and *July.* The Herb is ſaid to mitigate Pains, and diſcuſs Inflammations.

4. Reſeda; minor; vulgaris. *Tourn. Inſt.* 423. *Boerh. Ind. A.* 251. *Phyteuma*, *Offic.* J. B. 3. 386. Raii Hiſt. 2. 1054. *Reſedæ affinis Phyteuma dicta*, C. B. P. 100. *Reſedæ affinis Phyteuma Monſpelienſium dicta*, Park. Theat. 822. *Valeriana ſeptima*, Ger. 918. Emac. 1076. SMALL BASE ROCKET.

This grows about Montpelier, and flowers in the Summer. The Herb is ſaid to increaſe Venereal Inclinations.

5. Reſeda; minor; alba; foliis dentatis. *Barr. Ic.* 588.

6. Reſeda; minor; folio inferiori parum, ſuperiori magis inciſo; perennis. *Boerh. Ind. Alt. Plant. Vol.* 1.

RESINA, Reſin. See CATHARTICA.

Reſins conſiſt of Oil and Acid, and accordingly are artificially produced by mixing Spirit of Vitriol with Spirit of Wine, or of Turpentine. They are either ſolid or liquid, but theſe differ from one another only in the Proportion of Earth that enters their Compoſition. *Geoffroy.*

METHOD OF PREPARING RESINS.

Let the Tinctures prepared with Alcohol from fat reſinous Vegetables, be firſt well clarified by ſtanding, then diſtilled in a Glaſs Body, with a gentle Fire, till only one Fourth remains behind: The Alcohol thus drawn off, is to be kept for the ſame Uſe again. Then pour the thicken'd Tincture into a low Glaſs, with the Mouth wide enough to admit the Hand; and let this Veſſel contain twelve Times the Quantity of fair Water, in Proportion to the thickened Tincture. The Mixture thus will inſtantly grow thick, white, and ſoon exhibit yellow Curds, which, fallen to the Bottom, conſtitute a groſs viſcous, unctuous, and ſomewhat tranſparent Matter; then ſet the Glaſs in a Sand Furnace, and draw off the remaining Alcohol by means of an Alembic, continuing the

Operations ſo long as the Veins in the Head ſhew any Spirit to riſe, and add this Spirit to the former. At the Bottom there will remain the Water, with the abovemention'd Matter below it. This Matter liquifies in hot Weather, but grows hard in the Cold. The Water being thrown away, tho' it ſtill retains ſome Odour or Taſte, tho' but little Virtue, let the reſinous Matter collect and unite into a Maſs at the Bottom. It will firſt be flexible, ſoft, and, when touch'd, ſtick incommodiouſly to the Fingers; but when waſhed for ſome Time in ſeveral Waters, it begins to cool and harden, and when dried, appears a hard, brittle, tranſparent Body, that will run with Heat, diſſolve in Oil and Alcohol, but not in Water, and burn in the Fire like Oil. This Matter is called by the Chymiſts Roſin; and requires to be kept in a cool dry Place, and in a cloſe dry Veſſel.

This Roſin may be thus prepared from almoſt any oily, ponderous, dry and reſinous Parts of Vegetables. Nature often produces the like from Vegetables, but no where more perfect than in the Camphire Tree, which yields a pure, white, tranſparent, highly odorous, volatile Roſin, tho' hard to grind: And next to this is Benjamin, which is alſo a pure volatile Roſin, copiouſly afforded by the Tree. But when pure Alcohol acts upon reſinous Plants, whilſt yet green and juicy, the Water abounding in theſe Juices mixes with the Alcohol, and dilutes it; whence it acts like common rectified Spirit, or rectified Spirit of Wine, in Proportion as the Plant contained more or leſs Water; and thus its Action becomes different.

REMARKS.

This Experiment, which is conſiderably general, ſhews the Nature of Roſin, which in the Plant ſeems to be a pure thin Oil. And hence Chymiſts are taught under what various phyſical Forms Oils may ſubſiſt, in reſpect of Heat and Cold; for the Roſin, which in a certain Degree of Cold is hard and brittle, ſoon reſolves by Heat into a pure fluid Oil. Some have ſuppoſed that Roſins are generated, whenever any ſtrong Acid is mixed with a clear Oil, upon obſerving that the ſtrong and fiery Spirits of Nitre and Vitriol turn with Oils into a pitchy Maſs, which, when farther perfected by the Fire, becomes a true Roſin; and therefore that the Sulphur thus produced is a true Roſin of the Earth. But there is Room to doubt whether the Coagulation of the Oil proceeds from the Acid, becauſe by the natural Converſion of Balſams into Roſins, the Acid is always more ſeparated from the Balſam, the more the Balſam, which was firſt liquid, grows thick and hard; and at laſt there is leſs Acid found in the Roſin, than in the more fluid Maſs; and even the Roſins, which are thus ſaid to be produced by a Mixture of Acid and Oil, yet always differ from thoſe prepared by Nature, or by the Means of Alcohol. Theſe Roſins ſoon diſſolve in Alcohol, but Sulphur never.

The Roſins, thus prepared, manifeſt their oily Nature by being totally inflammable, and ſeem to contain their former preſiding Spirit; for the Smell, Taſte, and particular Virtue of the Subject are always found in the Roſin, though this is to be underſtood only ſo far as they remained in the oily Part of the Plant. Hence theſe Virtues are long retained and preſerved for Years, in the viſcous Subſtance of the Roſin; whereas they would otherwiſe be ſoon loſt in the Plant itſelf. And hence it often happens, that the Roſins taken in the Body paſs through it undivided, by reaſon of their Tenacity, and without having their Spirits extricated to perform their proper Actions, as not meeting with the Bile, or other ſaponaceous Fluid, to diſſolve and open them; and this is frequently regretted by Phyſicians, while they direct theſe Roſins in Form of Pills, which may paſs the Body without being diſſolved, and without producing the deſired Effect. Theſe Roſins, alſo, generally have a manifeſt, ſharp, cauſtic, inflammatory, violent Virtue; ſo that if they ſtick to the Tongue, or the Jaws, they prove very troubleſome by their Acrimony; and this Effect they often have upon the Stomach and Inteſtines, and thus they may prove miſchievous, by ſtimulating and inflaming. And thus the Roſins of Coloquintida, Euphorbium, Hellebore, Jalap, Scammony, and the like, ſometimes occaſion violent and dangerous Purgings, that cannot eaſily be ſtopt. In order to prevent both theſe ill Effects, it has been found proper to grind them in a Glaſs Mortar, for a conſiderable Time, with an equal Quantity of dry Sugar; ſo as thus to prepare a fine Powder, which being afterwards mixed and taken in any Syrup, never paſſes the Stomach undiſſolved, nor ſticks in the Folds of the Inteſtines, but proves an excellent and expeditious Kind of Purge. So likewiſe, if mixed with a little Yolk of Egg, this will diſſolve their Tenacity, and promote and increaſe their Efficacy; and when thus treated, theſe Roſins will alſo prove purgative, which are obtained from Simples not purgative themſelves, as we ſee in the Roſin of Guaiacum.

Some of the greateſt Artiſts have obſerved, that the propet diſtilled aromatic Oils, abounding with their own Spirits, grow reſinous, as often as they are deprived thereof. And this is certainly found in ſome Oils; for if pure Oil of Cinnamon be diſſolved in Alcohol, and the Alcohol be with a gentle Fire drawn over from it by Diſtillation, it carries over the Spirit with it, and leaves the Oil behind deprived thereof and reſinous. But as the purging Virtues of certain Plants partly reſide in that reſinous Matter, which Alcohol extracts, and partly in another active Part of the Plant, which diſſolves in Water, as appears in Jalap; the Remainder of ſuch a Plant, after the pure Alcohol has extracted all the Reſin, will afford another Part by being boiled in Water. And if this Decoction be ſtrained, inſpiſſated with a gentle Fire to the Conſiſtence of an Extract, and afterwards mixed along with the Reſin diſſolved in the Yolk of an Egg, there will thus be obtained an excellent Compoſition, containing almoſt the whole medicinal Virtue in a little Compaſs.

RESINA JALAPII. See JALAPA.

RESINA SCAMMONII. See SCAMMONIUM.

RESINATUM VINUM. Wine impregnated with Reſin of the Pitch-Tree. It is mentioned by *Celſus*, L. 2. C. 24. as good for the Stomach. *Dioſcorides*, L. 2. C. 43. informs us it was generally made in *Galatia*, where the Wines were ſubject to grow ſower, without this Precaution, becauſe the Climate was too cold to ripen the Grapes.

RESINOCERUM. A Mixture of Reſin and Wax.

RESOLVENTIA. Reſolvent Medicines. See FIBRA and INFLAMMATIO.

RESOLUTIO. Reſolution. See FIBRA and INFLAMMATIO.

RESOLUTIVUS. Reſolutive, a modern Epithet for that Species of Fermentation, which tends to the Reſolution of Bodies. *Caſtellus* from *Stahl.*

RESONITUS. A Contrafiſſure. See CAPUT.

RESORBENTIA. The ſame as ABSORBENTIA.

RESPIRATIO. Reſpiration. See PULMONES.

What Reſpiration is, and why it is uninterruptedly carried on without the Concurrence of the Mind, will appear from what follows. Tho' no Action ſeems to be more frequent than Reſpiration, yet it is not to be underſtood without conſiderable Difficulty, not only becauſe it is partly vital and partly voluntary; but alſo becauſe an incredible Number of Organs are ſubſervient to it; for which Reaſon its Nature is carefully to be inveſtigated, which is moſt commodiouſly done by conſidering the Phenomena with which it is accompanied, and the Organs employed in carrying it on.

The Lungs ſuſpended in the Air, which every where acts upon them, and equally preſſes them, always collapſe, contract themſelves into a ſmaller Space, and become much leſs than when they remained in the entire Thorax, as is ſufficiently evinced by Anatomy: This is principally perform'd by the contractile Force of the muſcular Fibres, which connect the ſquamous Segments of the Bronchia.

If the Lungs thus contracted are filled with Air, forcibly blown through the Glottis, they are ſo diſtended as in Bulk not only to equal that which they had in the entire Thorax, but even much to exceed it, as is ſufficiently certain from Experience.

The ſame Thing happens, if when an Acceſs for the Air thro' the Glottis, is left to the Lungs, the Air externally acting on the Lungs is either removed, or its Preſſure diminiſh'd. This may be demonſtrated by Experiments made in the Air-Pump.

Hence 'tis obvious, that the Lungs by their proper Force have always a Tendency to become leſs in all their Parts, than they are when placed in the entire Thorax. For this reaſon 'tis certain, that they are in a continual State of Diſtraction, ſo long as a Perſon is alive, ſo that they muſt collapſe, and be diminiſhed, whilſt the whole of the Animal remains in a Vacuum, obtain'd by an Exhauſtion of the Air in an Air-Pump.

For there is nothing ſimilar to a circumambient Air between the external Membrane of the Lungs, and all the internal Surface of the Pleura, in a ſound Perſon; nothing therefore externally compreſſes the Lungs, except the Diaphragm. There is, however, always an internal Air contained in them, and freely conveyed to them through the Glottis. Hence the Lungs are always ſomewhat more diſtended by the internal Air, than they are compreſs'd by the external Air, the Acceſs of which is hindered by the Diaphragm, which is ſo connected with the Ribs and Vertebræ, that the Air cannot enter the Thorax in ſuch a manner as would be requiſite for an Equilibrium.

The Truth of this Doctrine, which in accounting for Reſpiration is of the laſt Importance, is evidently demonſtrated by Anatomy; by the Production and Growth not only of the Fœtus in the Uterus, but alſo of Infants brought into the

World;

World; by the Inflation of the Lungs, by Wounds penetrating into the Cavity of the Thorax, occaſioning a Collapſe of the Lungs, hindering their Dilatation, and inflicted ſometimes on one and ſometimes on another Side of the Thorax; but moſt of all by the celebrated Experiment of Mr. *Hook* upon live Dogs.

Since, therefore, in Inſpiration, a greater Quantity of Air enters the Lungs through the Glottis, it will extend the Lungs more, and overcome their natural Force; ſo that in this Action the Lungs are paſſive, but how far they are active is only to be diſcover'd from certain Phenomena.

In vital Inſpiration then, eſpecially conſidered in a ſleeping Perſon, firſt, the Ribs, eſpecially the nine ſuperior ones, articulated at the Vertebræ, and by Cartilages join'd to the Sternum, with their arched Part riſe ſo to the Clavicles, that this Motion is principally obſerv'd in the Middle of the Arch. Whilſt three or, perhaps, four of the inferior Ribs are turned downwards, backwards, and obliquely outwards; but in ſuch a Manner that the ſeventh, eighth, ninth and tenth Ribs are by their cartilaginous Segments, as it were, drawn inwards. Secondly, the whole Abdomen, to the very End of Inſpiration, is gradually *rendered more tumid, and preſs'd outwards*. Thirdly, at the ſame Time the Cavity of the Thorax is enlarged, as is obvious by meaſuring with a Cord, by viewing it with the Eye, and eſpecially by a mechanical Conſideration of the Figure, Situation, Connection, and Articulation of the Ribs here placed, according to the Rules of moſt perfect and conſummate Art, as *Borelli* has excellently demonſtrated.

But during this Action the Diaphragm is drawn downwards from the convex and ſinuous Situation it was in before, and aſſumes a plainer Figure, as is obvious from diſſecting live Animals, and from large abdominal Wounds inflicted on Man. But that this Change of Figure in the Diaphragm depends upon the Contraction of its muſcular Fabric, is ſufficiently obvious from an anatomical Conſideration of it.

Since, therefore, in Inſpiration no other Things happen, its Cauſe muſt be determined by theſe; namely, the above-deſcrib'd Motions of the Ribs and Diaphragm: For which Reaſon, we muſt enquire into the Cauſes which produce theſe Motions.

The ten ſuperior Ribs, being bonny, arched, incurvated, and more depreſſed and flat in the Middle than in their riſing Extremities, are by two Apophyſes fortified with a Cartilage, articulated, firſt, into the cartilaginous Pit of the Vertebræ, imprinted laterally and backwards on the united Bodies, or only in the Body of the firſt Vertebra; ſecondly, in the cartilaginous Sinus imprinted on the tranſverſe Proceſs of the Vertebræ. The ſeven ſuperior Ribs are join'd to the Sternum, by the Interpoſition of an arch'd, cartilaginous, and pretty elaſtic Segment; which in the firſt Rib forms an acute Angle upwards, in the ſecond Rib an Angle almoſt right, and in the other five Ribs an obtuſe Angle with the Sternum. So that the Angle here form'd by the Cartilages of the Ribs, with the Sternum, is the more obtuſe the more inferior the Rib is; or that Segment aſcending enters the lateral Cavities of the Sternum ſo that the more ſuperior the Rib is, the ſmaller the Angle of this Inſertion is from the Concourſe of the ſuperior Part of the Sternum. But the ſixth, ſeventh and eighth Ribs join their cartilaginous Arches, not only in their uniting Extremities, which reach to the loweſt Part of the Sternum, but they alſo coaleſce by mixing broad cartilaginous Proceſſes with each other. The two and ſometimes the three inferior Ribs being only furniſh'd with one poſterior Apophyſis, are only articulated to one Sinus in the Body of its own particular Vertebra; and their Cartilages being almoſt only tendinous, they do not touch the Sternum, but are inſerted in the Diaphragm and Cartilages of the next Ribs. So that they ſeem to be ſubſervient to directing, equally ſuſtaining, and performing the Motions of the Diaphragm, backwards and downwards.

The external intercoſtal Muſcles, ariſing from the inferior Margin of the ſuperior Rib, deſcend obliquely foreward, and are inſerted in the ſuperior Margin of the Rib next to it below, through all the bonny Circumference, between all the Ribs both true and ſpurious. But the internal intercoſtal Muſcles, ariſing from the inferior Margin of the ſuperior Rib at a Diſtance from the Sides of the Spine of the Thorax, and deſcending obliquely backwards, interſect the former, and are inſerted in the ſuperior Margin of the next Rib below, thro' all the bonny Circumference.

But the ſubclavian Muſcle ariſes fleſhy from half the inferior Part of the Clavicle, where the Spine is joined to the Scapula, and going on in a forward Direction, is inſerted in the ſuperior Margin of the firſt Rib near the Sternum.

If, therefore, all theſe Muſcles are contracted at once, then the firſt Rib is ſufficiently fixed by its own Articulation, whilſt, by the Force of the Subclavian, the nine following Ribs are elevated and turn'd outwards, eſpecially in the Middles of their Arches, yet ſo as to remain in an equable Paralelliſm, and depreſs the cartilaginous Segments. Thus the Cavity of the Thorax is remarkably increaſed.

The Diaphragm already deſcribed, when contracted, becomes plain, greatly dilates the Thorax, contracts the Abdomen, draws the anterior Cartilages of the ſpurious Ribs inwards towards the Vertebræ, draws the two inferior ſpurious Ribs downwards, and diſtends and overcomes the Force of the abdominal Muſcles

And theſe Muſcles alone ſeem to perform vital Inſpiration; the intercoſtal Muſcles receiving Nerves from the dorſal Nerves, and the Diaphragm from the vertebral, diaphragmatic, and intercoſtal Nerves.

When, therefore, the Cavity of the Thorax is increaſed between the Pleura and Surface of the Lungs, nothing preſſes the Lungs; ſo that the Air which enters them through the Glottis, inflates them till they again are, or rather remain, contiguous to the Pleura and Diaphragm; and by this means produces all the Effects already mentioned.

Whilſt the Parts remain in this Situation, the Air acts upon the Lungs with a Force equal to that with which the Thorax reſiſts; *ſo that the Lungs will remain in a State of Reſt.* Hence leſs Blood will paſs through them, and a ſmaller Quantity of it be forc'd into the Left Ventricle of the Heart, and conſequently leſs Blood will be convey'd to the Cerebellum and its Nerves. The arterial Blood will alſo act leſs on the intercoſtal Muſcles and Diaphragm; ſo that the Cauſes dilating the Thorax are weaken'd. Hence the Elaſticity of the cartilaginous Segments again depreſſes the Ribs, in which Work they are alſo aſſiſted by the muſcular Fibres, ariſing from the Side of the Sternum within the Thorax, and inſerted into the bonny Extremities and Cartilages of the true Ribs. At the ſame Time the diſtracted Fibres of the Peritonæum and abdominal Muſcles reſtore themſelves. Hence the compreſſed Veſcera thruſt the relaxed Diaphragm upwards into the Thorax, which is by this Means contracted, and the Air expelled from the Lungs. By this Means Expiration and the Actions already mentioned are perform'd. But in a particular manner, by theſe two Actions the Blood is not only carried through the Lungs, but its Motion accelerated.

At the ſame Time the Blood being again accelerated, begins to flow more ſtrongly and copiouſly to the Cerebellum and Muſcles, ſo that the Cauſes contracting the intercoſtal Muſcles and Diaphragm are renew'd, Inſpiration is reſtor'd, and thus the genuine, preſent, and effectual Cauſe of this alternate vital Motion is aſſign'd.

But beſides theſe Cauſes of Reſpiration, there are alſo others ſubſervient to the Will, and applied to the Ribs for the violent Dilatation of the Breaſt, and its Contraction. Tho' the former are ſubſervient to the other Functions, yet they alſo concur to this, ſince they are naturally form'd for it; for firſt, the firſt Scalenus ariſing fleſhy from the anterior Part of the tranſverſe Proceſs of the ſecond, third and fourth Vertebræ of the Neck, and deſcending obliquely forwards, is by its Tendon inſerted in the firſt Rib. Then the other Scalenus, ariſing fleſhy from the lateral Part of the tranſverſe Proceſs of the ſecond, third and fourth Vertebræ of the Neck, and deſcending tendinous above the firſt, is inſerted in the ſecond or third Rib. Then the third Scalenus ariſing fleſhy from the anterior lateral Part of the tranſverſe Proceſs of the ſecond, third, fourth, fifth and ſixth Vertebræ of the Neck, is inſerted for the moſt Part into the firſt Rib; for by means of theſe Muſcles the three ſuperior Ribs are elevated, ſuſtained and ſupported, leſt the Action of the intercoſtal and other Muſcles ſhould be determin'd downwards in ſtrong Inſpiration. Nor is it any Objection, that by their Action the Neck is bended or turn'd about; becauſe if they act at the ſame Time, and if the Neck is fixed by its erecting Muſcles, which are the Spinalis Colli, the Tranſverſalis Colli, the Interſpinalis Colli, the Longiſſimus Dorſi, and the Semiſpinatus, acting at the ſame Time, and fixing the Neck; the Action of the Scalenus neceſſarily elevates the Ribs. But in very violent Reſpiration, 'tis certain that many ſuch Things concur. Fourthly, the Serratus Anticus Minor ariſing fleſhy from the Caracoid Proceſs, deſcending obliquely forwards, becoming larger, and then ſmaller, is inſerted fleſhy in the anterior bonny Parts of the ſecond, third, fourth, and fifth Ribs. Fifthly, the Serratus Anticus Major ariſing fleſhy, large, and thick from the Baſis of the Scapula, and deſcending obliquely forwards, is, as it were, by notch'd fleſhy Portions, inſerted into the eight ſuperior Ribs; the two, three, four, or five inferior of which are indented with ſimilar Portions of the Obliquus Exterior Abdominalis. For if the Muſcles of the Scapula, the Trapezius, the Rhomboides, and the Levator, fix the Scapula immoveable upwards and backwards; then the Action of both the Serrati ſtrongly elevates the Ribs from the ſecond to the eighth, which we obſerve to happen in the ſtrongeſt Inſpiration. Sixthly, in the poſterior Part, the Serratus Poſticus

Superior, ariſing tendinous from the Spines of the two inferior Vertebræ of the Neck, and the three Superior of the Thorax, is by fleſhy Denticulations inſerted into the Curvature of the ſecond, third and fourth Ribs, which it raiſes upwards. Seventhly, Reſpiration is alſo aſſiſted by the Serratus Poſticus Inferior, which ariſing from the Spines of the lumbar Vertebræ, and ſometimes from ſome of the thorcaic Vertebræ, is with digitated Fibres inſerted almoſt in the Middle Arch of the ninth, tenth, eleventh, and the Extremity of the twelfth Rib; for this Muſcle, by the Deſcent of its Fibres, almoſt from the horrizontal aſcendant Muſcle, and by drawing theſe laſt Ribs outwards, downwards and backwards, enlarges the Thorax, and prevents its Coarctation by an Approach of theſe Ribs, in conſequence of the Contraction of the Fibres of the Diaphragm.

But if the Action of the Muſculus Obliquus exterior, and of the Muſculus Rectus acting in Concert, depreſſing the Ribs, contracting the Thorax, and reſiſting the Serratus Inferior Anticus, as is obvious from their Connection, concurs with the Action of the Sacro-lumbaris, which is a highly compound Muſcle, hardly capable of being diſtinctly deſcrib'd. It conſiſts of a Series of muſcular fleſhy Fibres, ariſing from the tranſverſe Proceſſes of the Lumber Vertebræ, and their Spines, and ſuch as aſcend upwards, and are there join'd to the fleſhy Muſculi acceſſorii, which proceed from the Ribs: This Action, I ſay, ſtrongly aſſiſts a violent Expiration, the Abdomen being at the ſame Time contracted by Means of the *Muſculus Tranſverſus*.

In Women the Sternum is more compreſs'd, the Clavicles more ſtreight, the Thorax narrower, and its anterior Part flatter, and the Superior cartilaginous Segments ſooner become bonny, than the inferior. Hence in Inſpiration their Sternum is turn'd upwards and obliquely outwards, and the whole Thorax as it were riſes. Hence alſo they reſpire moſt freely whilſt their Abdomen is tumid.

'Tis certain that thoſe Muſcles which are ſubſervient to Reſpiration, and at the ſame Time under the Influence of the Will, are far larger and ſtronger than thoſe which neceſſarily perform vital Reſpiration. Hence it is, that the Force of the former is capable of augmenting, diminiſhing, and of totally ſtopping both Inſpiration and Expiration.

Hence we may conceive, that there are not two Moments in the Life of Man immediately ſucceeding each other, in which the Pulmonary Veſſels retain the ſame Figure, Largeneſs and Action.

As alſo, that here ſome Muſcles have what we may call an Antagoniſm without an Antagoniſt-Muſcle.

Hence alſo we underſtand the Antagoniſm between the Action of the Fluid which moves the Muſcles, and the Reſiſtance of the ſimple Elaſticity in the Solids.

That in order to alternate Motions in Parts to act reciprocally, it is not neceſſary to ſuppoſe alternate Actions of the Humours, ſince it is ſufficient that they act in either.

The Will is capable of ſtopping the Force and Cauſe of Reſpiration, tho' not of directly ſtopping the Force of the Heart; ſo that the Cauſe of Motion in the Heart, is ſtronger and more conſtant, and its Action more frequent: There is, however, a kind of Conſent between the Pulſations of the Heart, and the Number of Reſpirations; tho' it is hard to account for ſuch a Conſent.

Hence we perceive the Neceſſity of reiterated Pulſations of the Heart, in order to the Repetition of Reſpiration. But how long theſe may ſtop, without deſtroying Life, is hard to determine.

Hence alſo we underſtand, why in an aſthmatic Paroxyſm, a Peripneumony, a Difficulty of Breathing, and in the Agonies of Death, Reſpiration is performed by the vital Muſcles, whilſt thoſe under the Direction of the Will greatly contribute to it: So that the Neck, Scapulæ, Breaſt, inferior Ribs and Back, are evidently moved.

Why in perfect Health, when the Body is at Reſt, and the Perſon awake, Reſpiration is ſo ſlow and ſtill, that it is hardly perceptible, and at the ſame time the Circulation of the Humours briſk.

Why in Coughing and Sighing, the Reſpiration being accelerated, the Motion of the Blood through all the Veſſels is increaſed.

Why the firſt Action of Reſpiration is Inſpiration, and the laſt Expiration.

Why when in Diſeaſes the Reſpiration ceaſes long, the venous Sinuſes, the Auricles, and the Heart itſelf, palpitate.

And why it is, that an Air which is highly heavy, light, moiſt, dry, hot, or cold, compreſſed or rarified; as alſo that which being pent up in a ſmall Space, is not ſoon renewed, is abſolutely unfit for performing Reſpiration, and continuing Life. *Boerhaave Inſtitut.*

OF PROGNOSTICS FROM A GOOD AND BAD RESPIRATION.

That a free and regular Reſpiration, according to Nature, is always of great Moment towards predicting the Recovery of the Patient, is, I believe, univerſally acknowledged. *Hippocrates*, in his Book of *Prognoſtics*, tells us, "That a Facility of Reſpiration has a great Influence towards a Recovery "in all acute Diſeaſes, which come to a Criſis in forty Days." And he had very good Grounds for ſo pronouncing, when, as *Galen* ſays in his Commentary on the Place, "A good Reſpiration ſhews that the Thorax, Heart, Lungs, Diaphragm, "Pleura, and, in ſhort, all the Parts contributing to Reſpiration, are in a ſound State; for it is impoſſible for any of "the Organs ſubſervient to Reſpiration to be injured, and the "Patient at the ſame time to breathe in a free and natural "manner." And therefore the ſame Author, *Lib.* I. *de Criſ.* among other Signs, juſtly reckons a good Reſpiration But that we may with Certainty prognoſticate a good Event, there are two other Signs to be alſo regarded, which are, a ſtrong Pulſe, and a right Diſpoſition of the Sick, with reſpect to ſuch Things as are offered for his Suſtenance; for theſe three Signs obſerved at the ſame time, that is to ſay, a juſt and natural Reſpiration, a right Diſpoſition of the Patient with regard to Meat and Drink, and a Pulſe ſufficiently ſtrong, are Indications of great Importance toward prognoſticating a good Iſſue to the Diſeaſe, as *Galen in* 3 *Epid.* obſerves; and they have frequently proved ſalutary Indications in thoſe who have been regarded as dying Perſons. A due Reſpiration, therefore, in all acute Diſeaſes, is good, and the contrary bad, as it indicates an Indiſpoſition of ſome Organ belonging to Reſpiration. This laſt Sign, however, is of itſelf no ſufficient Indication of a fatal Event, but only in Conjunction with other mortal Prognoſtics; in which Circumſtance, it is a moſt fatal Indication, when attended with an Abhorrence of Food, a very dry and parched Tongue, and yet no Thirſt, Excrements of the worſt kind, and a very weak and low Pulſe; and the Phyſician may, in ſuch a Caſe, confidently predict the Death of the Patient. A bad Reſpiration then is always a bad Sign, though it be not always mortal in acute Diſeaſes; but it is always very bad, when attended with another very bad Sign, and much more ſo, if attended with many ſuch Signs. Of ſuch a Reſpiration *Hippocrates* ſpeaks, 11 *Aphor.* 50. where he ſays, "In a Fever not intermittent, a Dyſpnœa, attended "with a Delirium, is mortal."

If it be aſked, what are theſe bad Reſpirations? we anſwer, they are the great rare Reſpiration, and the ſmall frequent one, which, in dying Perſons, *Hippocrates* uſually calls Βραχύπνοια, *Brachypnus*, [See BRACHYPNOEA.] a ſmall, ſlender, weak, diminiſhed Breathing. Thoſe Reſpirations are alſo very bad, which are performed with a Sound of the Thorax, like that of Perſons on the Point of Suffocation by Drowning, being obſcure, ſtertorous, and interrupted. Of ſuch we find *Hippocrates* ſpeaking, 11 *Aphor.* 67. "In Fevers, ſays he, the Breath ſtriking with a Noiſe in its Paſſage [τὸ πνεῦμα περισκόπλον, See PNEUMA] is bad; for it indicates a Convulſion." By this ſtriking or impinging Breath, *Galen*, in his *Comment* on that *Aphoriſm*, underſtands one which is interrupted in the Middle, and ſtops. A ſobbing kind of Reſpiration [κλαυθμώδεις ἀναπνοαὶ] is alſo very bad, as we are taught by *Hippocrates*, 6 *Aphor.* 54. But the worſt of all Reſpiration, and ſuch as is obſerved in dying Perſons, are the cold, as when the Breath is expired cold from the Mouth and Noſtrils. Next to theſe, are thoſe we find mentioned, *Coac.* 260. with the Epithets, *extended*, *urgent*, and *obſcure*, [ἐκτεῖνον, καὶ καλιπτῆγον, καὶ ἀμαυρὸν] where they are pronounced very bad, and Signs of approaching Death. By the firſt of theſe, we are to underſtand the ſame with the *ſublime* or *apparent*, [See PNEUMA.] in which the Breaſt, and ſometimes the Scapulæ, are diſtended, and the Lobes, or Pinnæ, of the Noſtrils, are moved; but what is inſpired, is ſo little as to be ſcarce perceptible to Senſe, and yet the Inſpiration is very quick and frequent, on account of the extreme Urgency of the Heat, which gives Occaſion for the two other Epithets of *obſcure*, and *urgent*, or *haſty*. Theſe then are the ſeveral Kinds of bad Reſpiration; and we ſhall now treat of the Prognoſtics, which may be drawn from them ſeparately.

A great and quick Reſpiration, tho' it indicates a Redundance of fuliginous Excrements in the Body, according to *Galen, de Difficult. Reſp. Lib.* I. *Cap.* 20. yet it ſhews us, he ſays, the Soundneſs and Integrity of the Faculty; and that none of the Organs ſerving to Reſpiration is injured; for their Greatneſs, or Fulneſs, and Quickneſs of Reſpiration, is occaſioned by the Neceſſities of Nature, when there is a Promptitude of the Organs, and an entire Soundneſs of the Faculty. A great or full Reſpiration, and at the ſame time ſlow, or at long

long Intervals, ſhews a Delirium; and a ſmall and quick Reſpiration indicates a Collection of ſuliginous Excrement, or a Pain in ſome Part which is moved by Reſpiration, or, as *Hippocrates* ſays, in his *Prognoſtics*, an Inflammation of the Parts above the Diaphragm. A ſmall and ſlow Reſpiration, as *Galen* obſerves, in his *Comment* on the Caſe of *Pythion*, 3 *Epid. Sect.* 3. *Ægr.* 3. where there is no Collection of ſuliginous Excrement, indicates a Pain of ſome Organ ſubſervient to Reſpiration, or elſe an Inflammation of ſome neighbouring Part. Theſe two laſt Differences of Reſpiration, with bad Signs, are more to be dreaded than the two former, as they indicate a great Weakneſs or Decay of the Faculty, or at leaſt a Pain in ſome Part which moves the Thorax. Upon the whole then, a great and quick Reſpiration is a Sign of much Heat, and a Redundance of ſuliginous Excrement, but attended with a Soundneſs and Strength of the Faculty. A great, and at the ſame time a ſlow Reſpiration, is better than the former, as it approaches nearer to a ſound and healthy State, and is an Indication of the Soundneſs of the Faculty without much Heat, and without fumous Excrements. All theſe are to be regarded by the Phyſician, in Conjunction with other Signs and Prognoſtics, to be formed from them altogether. But we proceed to ſpeak of Reſpirations which are both great and denſe, and, on the contrary, of great and rare Reſpirations, the Knowledge of which will afford us many Prognoſtics, for predicting the Fate of the Patient.

A great, and at the ſame time denſe Reſpiration, is, when Inſpiration is great and full, and Expiration hot and fervent through the Mouth and Noſtrils. And this happens, as we read in the *Prognoſtics*, from a Pain or Inflammation affecting ſome Organ ſubſervient to Reſpiration, or a Part of the Thorax; for Inſtance, the Heart, Diaphragm, Lungs, Pleura, or Muſcles of the Thorax; for if theſe Parts be pained or inflamed for Want of a due Dilatation, a Denſe neſs of Reſpiration muſt of neceſſity be the Conſequence: Such a Symptom, however, indicates a Strength of the Faculty, which gives great Hopes of a Recovery. A great and rare [ἀραιὸν, as when the Breath is long in drawing, in oppoſition to *denſe*, πυκνὸν] Reſpiration in acute Fevers, indicates a Delirium, according to the *Prognoſtics*. But what are we to underſtand by a great Reſpiration? Is it where there is a great Dilatation of the Thorax? By no means; for in thoſe who are affected with a Tumor, or a Straitneſs of the Organs of Reſpiration, without any flammeous Heat, there is a very great Dilatation of the Thorax, but Inſpiration is but ſmall; we ſay, therefore, that a great Reſpiration is ſo called on account of the great Quantity of inſpired Air, and expired ſuliginous Particles; and this ſeems to be expreſly the Senſe of *Hippocrates*, in thoſe Words, μέγα δ' ἀναπνιόμενον [πνεῦμα] which muſt be underſtood of the great Quantity of Breath in Reſpiration, and not of the Dilatation of the Thorax. To this it may be added, by way of Confirmation, that among the Differences of Reſpiration, what they call the ſublime and apparent one, tho' attended with a very remarkable Dilatation of the Thorax, is yet but ſmall and ſlender, as appears from *Galen*.

But why is a great and rare Spirit an Indication of a Delirium? *Galen*, *Lib.* 2. *de Difficult. Reſp.* has demonſtrated the Truth of this Obſervation at large; but then it does not follow, that all delirious Perſons ſhould breathe after this manner; for a Delirium may be attended with a Straitneſs of the Breaſt, or a Pain, or a Decay of Strength; all which occaſion a ſmall and rare Reſpiration. All, however, who labour under this Symptom of great and rare Reſpiration, are certainly delirious, as was particularly obſerved by *Hippocrates* of *Philiſcus*, *Silenus*, the Wife of *Dromeades*, and others. As to Prognoſtics, from this kind of Reſpiration, they are always of Importance, becauſe a Delirium is always bad, though not mortal, except when it is attended with other bad and mortal Signs, as it was in the Caſes of *Philiſcus*, *Silenus*, the Wife of *Dromeades*, and the phrenetic young Man of *Melibœa*. Of *Philiſcus*, 1 *Epid. Ægr.* 1. it is ſaid that his Breath was conſtantly ὥσπερ ἀνακαλυμμένον, ἀραιὸν, μέγα, "as if it were "revoked inwards, rare, great, [See PNEUMA] his Spleen "was elevated into a round Tumor; he was always in a cold "Sweat, and he had Exacerbations on even Days." In this Senſe, cold Sweats were one fatal concomitant Sign. *Silenus*, *Ægr.* 2. "had, from the Beginning to the End, a great and "rare Reſpiration, accompanied with a continual Palpitation "of the Hypochondrium," which at length proved mortal; for in the Beginning he made black Urine, which depoſited a black Sediment, was delirious, and had pinguious Stools. On the ſixth Day he ſweated a little above his Heart, and his extreme Parts were cold and livid, with other Symptoms, which in Conjunction with his great and rare Reſpiration, were more than ſufficient Indications, not ſo much of a Delirium, as of the Fatality of the Diſeaſe. Of the Wife of *Dromeades*, *Ægr.* 11 we read, "That on the ſixth Day in the Morning, "ſhe was ſeized with a Rigor, which was ſoon ſucceeded by "an univerſal Heat, then by a Sweat all over, and a Cold-"neſs of the Extremities, a Delirium, and a great and rare "Reſpiration; and a little after ſhe was ſeized with Convul-"ſions, which began at the Head, and carried her off on a ſud-"den." The young Man of *Melibœa*, 3 *Epid. Ægr. ult.* "had a rare and great Reſpiration, and at long Intervals, "with a ſoftiſh Tenſion of the Hypochondrium, of an oblong "Figure, was continually moleſted with a Palpitation of the "Heart, and made Urine like Oil."

A ſmall Reſpiration is what *Galen*, *Com.* 3. *in* 3 *Epid.* after *Hippocrates*, calls *ſlender* and *diminiſhed*, [λεπτὸν καὶ μινυθῶδες] and alſo *obſcure*, becauſe the Patient can hardly be perceived to breathe. Such a Reſpiration is always bad, as proceeding from Weakneſs, and a Decay of the natural Heat; and if this ſmall Reſpiration be alſo frequent, it is an Indication, according to *Galen*, of a Pain or Inflammation in ſome Part above the Diaphragm. But the Author of the *Coac.* 260. ſays, that a frequent and ſmall Reſpiration indicates a Pain or Inflammation in the principal Parts. Such a Reſpiration is very much to be dreaded in acute Diſeaſes; and the more, if it be conſequent upon a great Reſpiration; for it is an Indication either that Nature is very much ſunk, as was before obſerved, or that ſome principal Part ſuffers under a Pain or Inflammation, or both together; nothing, however, can, with Certainty, be predicted from this Reſpiration alone, unleſs it be confirmed by other Signs; for many under acute Diſeaſes, whoſe Reſpiration has been ſmall and frequent, have recover'd. But when it is accompanied with other bad Signs, we have the greateſt Reaſon to be apprehenſive of the Event, and moſt when from frequent it becomes ſmall, as is obſerved in the laſt Stage of a Conſumption. A frequent, then, or quick, and at the ſame time a ſmall Reſpiration, with bad Signs, is mortal, as it was in the Caſe of the Siſter of *Temeneus*, 4 *Epid. T.* 28. who, on the ſixteenth Day, was obſerved to have ſuch a Reſpiration, and died ſoon after.

A ſmall, and at the ſame time rare, or an unfrequent Reſpiration, is perhaps the worſt of all, as it indicates that Nature is oppreſſed and exhauſted to ſuch a Degree, that it muſt of neceſſity ſink under the Diſeaſe; for which Reaſon it is by Phyſicians juſtly called a cold Reſpiration, as being a Sign of an extreme Degree of Cold, or an Extinction of the natural Heat, agreeably to that of *Galen*, *Com.* 3. *in* 3 *Epid.* where he ſays there is a kind of ſmall and rare or unfrequent Reſpiration, which, when cold, ſhews, that the vital Faculty is extinguiſhed. This is confirm'd by *Hippocrates* in his *Prognoſtics*, where a cold Expiration from the Noſtrils is pronounced mortal in a high Degree, as it was for inſtance, in dying *Pythion*, 3 *Epid. Sect* 3. *Ægr.* 3. and others obſerved by the ſame Author.

Having made theſe Remarks on Reſpirations, and what is indicated and portended by them, we ſhall proceed to examine in particular thoſe Reſpirations which are obſerv'd in dying Perſons, of which Nature are the cold, the ſublime or apparent, the ſtertorous, or what is attended with Noiſe, and ſometimes the ſobbing and interrupted. Of a cold Reſpiration, which is the moſt mortal of all, and never obſerv'd but in thoſe who are very near Death, *Hippocrates*, 6 *Epid. Sect.* 4. *Aph.* 27. thus ſpeaks; "Among deadly Signs is to be reckon-"ed a hot Vapour exhaling through the Skin and the Noſtrils, "when a cold Expiration through the Noſtrils has preceded "it." This is better expreſs'd by *Galen* in the following Words: "One of the moſt mortal Signs is a hot Vapour "proceeding from the Skin, after a cold Breath diſcharg'd "by Expiration; but the Exhalation of a hot Vapour thro' "the Skin and Noſtrils, is not always a ſufficient Warrant "for predicting Death; for, *as he ſays a little after*, ſuch a "Symptom only happens to thoſe who die of a very hot Fe-"ver, which having torrefy'd the very Subſtance of the "Heart, ends at laſt in a Refrigeration of the ſame; the "vital Faculty then ceaſing to act as the Heart dies. Some-"times there is an Eruption of Sweat, as when the Body is "full of Humours; but when it has been before exhauſted and "dried by the Heat of a violent Fever, a hot Vapour inſtead of "Sweat ſeems to exhale, and offer itſelf in a ſenſible manner "to the Touch." Hence in *Coac.* 160. "A febrile and ſuligi-"nous Reſpiration is pronounced mortal, tho' in a leſs De-"gree than the cold." Phyſicians, therefore, uſually call theſe three Signs deadly, which are, a Burning Fever, a cold and rare Reſpiration, and a hot Vapour from the Skin, which we may ſometimes call Sweat, or Moiſture, and which in Fevers is a Forerunner of Death.

An obſcure Reſpiration, alſo, as when the Patient can hardly be known to breathe, is no leſs mortal than a cold Reſpiration. An *obſcure* Reſpiration is when hardly any Breath is diſcharg'd by the Mouth and Noſtrils. In this Senſe a Reſpiration may poſſibly be very obſcure, and yet appear very manifeſt to all, as when the Thorax, Scapulæ, and Lobes of the

Noſtrils

Noſtrils are moved, which kind of Reſpiration Phyſicians properly call the *ſublime* and *apparent*, tho' a very ſmall Quantity of Breath be expired, on which Account it may be very obſcure. Of ſuch a Reſpiration we read, *Coac.* 260. where it is ſaid, "The worſt of all Reſpiration, and what ſhews "Death to be very near, is the extended, urgent, and ob-"ſcure."

We come next to treat of a ſtertorous Reſpiration, or ſuch as is perform'd with a Sound or Noiſe. A ſtertorous Reſpiration is when, in Breathing, there is perceived in the Throat a kind of Ebullition, or Noiſe, which we call a *Stertor*, or ſuch as Perſons make in Snoring. This Word is expreſs'd in *Latin* by the Words *Strepitus*, *Sonus*, and *Ebullitio*; and in *Hippocrates* by ῥέγχος (*Rhencos*,) ῥέγξις (*Rhenczis*) and ſometimes by κέρχνος (*Cerchnos*). In thoſe who die of acute Diſtempers this Fervor or rattling Noiſe in the Throat is generally heard for a little more than a Day before their Deceaſe, and indicates an Extinction of the Faculty, which is become too weak to expel the excrementious Particles from the Fauces. In others, who labour under Diſeaſes of the Thorax, as a Pleuriſy or Peripneumony, this Stertor is occaſioned by a Straitneſs, or a Retention of the Spit, attended with a ſmall Reſpiration, and oftentimes with an Orthopnœa, the moſt difficult of Reſpirations. In almoſt all dying Perſons this Fervour, or Stertor, is perceived a little before their End; but moſt of all in thoſe who die of Pleuriſies, Peripneumonies and Suppurations of the Lungs, who are every one affected with it, for which reaſon we muſt pronounce it a mortal Sign. But we are carefully to diſtinguiſh here with reſpect to the Time when this Stertor firſt comes upon the Patient, as whether it be in the Beginning, or Increaſe of the Diſeaſe; for if it is to be fatal, it never comes but after ſome other mortal Signs, as it did in the Caſe of the pleuretic Son of *Antiphanes*, 7 *Epid.* 28. and of *Menon*, another pleuretic Patient, 47. of whom *Hippocrates* ſays: "On the ſixteenth Day his Reſpiration was ſtertorous; he "had a Sweat about his Neck and Forehead, but ſeldom "about his Breaſt; his Forehead and extreme Parts were "perpetually cold in a moderate Degree. He had a conti-"nual Palpitation of the Veins about the Temples; and for "ſome Time before his Death, was affected with a Coma, "which held him Night and Day." A ſtertorous Reſpiration, therefore, in acute Diſeaſes, is generally pernicious; and when preceded by, or attended with other bad Signs, the moſt fatal of all Symptons, as it proved in the Caſe of *Menon* before-mention'd, who, among other bad Signs, had a Sweat about his Neck and Forehead, which *Hippocrates* in his *Prognoſtics* pronounces mortal in acute Diſeaſes, and a Coldneſs of the extreme Parts, one of the worſt of Symptoms. But in a Pleuriſy, or Peripneumony, and that they call a catarrhous Fever, becauſe conſequent or attendant upon a Catarrh, a Stertor is ſometimes occaſion'd by the Plenty of excrementitious Particles, or a Redundance of the Matter of the Catarrh falling down upon the Breaſt and Fauces, and is no more a mortal Sign, than it is in an Aſthma or Orthopnœa, where the Patients are frequently relieved by an Excretion or Reſolution of the Humour. But a mortal Stertor is diſtinguiſhed from another, in that it not only begins, but increaſes more and more with the Diſeaſe, and is ſtill more and more ſenſible; for ſuch a Stertor is mortal in the higheſt Degree, and is attended with all the mortal Signs: Whereas a Stertor, which begins with the Diſtemper, and in a little Time after, as the Diſeaſe increaſes, either through a plentiful Excretion of Humours by Means of a Cough, or the Conſumption of it by the igneous Heat of the Fever, leaves the Patient, is not ſo much to be dreaded, as occaſioned only by a Redundance of Humours, eſpecially if it ceaſes for ſome obvious Reaſon. But a Stertor, which tho' it be occaſion'd in the Beginning of a Diſeaſe by a copious Catarrh, yet every Day increaſes, muſt of Neceſſity be pernicious, becauſe it is a ſure Sign that Nature is ſo far burden'd and oppreſs'd with the Multitude of Humours, as to be rendered incapable of making the neceſſary Excretions, whence a Suffocation is to be apprehended. Thus it was with the Wife of *Polemarchus*, 5 *Epid.* 62. of whom it is ſaid, "That about the fifth Day ſhe had a painful Tumor of the "Left Knee, and ſomething ſeemed to be gather'd about the "Region of the Heart, and her Reſpiration was like that "of one on the Point of Suffocation by Submerſion, with "a rattling Noiſe in the Breaſt. On the ſeventh Day ſhe "died." The Son of *Antiphanes* alſo, 7 *Epid. T.* 28. who was affected with an Empyema, died with a Stertor upon him. To this we may add, that *Hippocrates*, 1 *Prorrhet* 25. tells us, "That under an Aphony, or Loſs of Voice, a conſpicuous [περόχιμον. See PNEUMA.] Reſpiration like that of Perſons ſuffocated, is pernicious." And ſo much for a ſtertorous Reſpiration, called alſo by ſome *Regmos* and *Cerchnos*.

We come now to conſider the ſublime or elevated, and apparent Reſpiration, which alſo is never obſerv'd but in dying Perſons. Some call this kind of Reſpiration *ſublime*, ſome *apparent*, ſome *conſpicuous*, [περόχιμον, *promptum*, readily offering itſelf to View] and ſome erroneouſly, a *great* Reſpiration, becauſe they obſerve the Thorax very much moved and dilated under it. Perſons under this Circumſtance, as *Galen Com. in* 1 *Prorrhet.* ſays, may very properly be ſaid to be ſtrangled, becauſe they want Air. And it is cuſtomary with the ſame Author to call this kind of Reſpiration φαινόμενον (*Phænomenon*) "apparent." The Patient in this Caſe ſeems in drawing his Breath, to move his whole Scapulæ; ſo that their Motion appears conſpicuouſly through his Cloths, and the upper Parts of the Thorax ſeem to labour in the Work. For this reaſon *Galen* calls it, alſo, μετέωρον (*meteoron*) "ſublime," becauſe the Patient in ſuch a Caſe ſeems to move the higher and more elevated Parts of the Thorax. He gives us alſo the Cauſes of this kind of Reſpiration in what follows. "Such "a Reſpiration, he ſays, may be owing to a Straitneſs of "the Organs, or to ſome Diſorder in the Origin of the Nerves, "which latter *Hippocrates* juſtly thought might be the Cauſe "of a *great* Reſpiration, he had more properly ſaid not a "*great Reſpiration*, but a *great Dilatation of the Thorax*, by "which ſome being deceived, have erroneouſly called it a "*great Reſpiration*, tho' Expiration in this Caſe be but ſmall." We may add that *Galen* and *Hippocrates* beſtow the Epithet of *ſublime*, not only on this kind of Reſpiration juſt deſcrib'd, but on that alſo under which the Lobes of the Noſtrils and the Muſcles about the Scapulæ are viſibly moved, which latter Reſpiration happens in acute Diſeaſes from an extreme Weakneſs. *Galen*, *Com. in* 3 *Epid.* 24. ſpeaking on this Subject, ſays, "By thoſe who are ſaid to fetch their Breath by the Extremity of the Noſe, [ἄκρᾳ τῇ ῥινὶ] are meant thoſe "I ſuppoſe, who in Reſpiration move the Lobes of their No-"ſtrils, for we have ſeen many ſick Perſons breathe in ſuch "a manner as to contract thoſe Parts in Expiration, and di-"late them in Inſpiration." This is a uſual Symptom with thoſe who are ſuffocated by a Quinſey, Peripneumony, or Suppurations of the Lungs, as well as thoſe who are extremely weak and exhauſted, and proceeds from an Obſtruction of the Paſſage for the Breath by an Inflammation of the Aſpera Arteria, whence the Patient is under a Neceſſity of fetching his Breath ſhort, and with all his Thorax, and often ſtrives to raiſe himſelf up when juſt ſuffocated, and attracts the external Air with all the Remainder of his Strength, and with his whole Thorax; and perhaps this Sort of Reſpiration was by *Hippocrates* called *ſublime*, or elevated (μετέωρον) becauſe the Patients in ſuch a Circumſtance ſtrive to raiſe themſelves. This *ſublime* Reſpiration, then, is uſual in Perſons labouring under a Quinſey, Peripneumony and Empyema, and for the Reaſons aſſigned.

In other acute Diſeaſes, under which the Patients are not ſuffocated by the Straitneſs of the Organs, this Reſpiration by the Extremity of the Noſe has another Cauſe, of which *Galen, de Diffic. Reſp. Lib.* 1. *Cap.* 23. gives the following Account. "If any one would have the proper Signs of a Diſ-"order in the Faculty of Reſpiration, or of any Animal Fa-"culty in general, and eſpecially when under a Perfrigera-"tion, he will have for thoſe Signs the Motion of the Lobes "of the Noſtrils, the Action of all the Muſcles about the "Scapulæ, and the precipitate Collapſion of the Thorax; "for when the Faculty by which Reſpiration is perform'd, "moves with leſs Vigour than it ought, it is aſſiſted in In-"ſpiration by the Lobes of the Noſtrils, which alſo help to-"wards attracting the external Air, after the ſame manner as "when we would draw in any Thing by the Mouth, we "contract the Lips; and thus again in Expiration there is a "precipitate Collapſion, and not a gradual Demiſion of the "Thorax." In ſhort, then we may conclude from what has been ſaid, that what we call a *ſublime Reſpiration*, however occaſioned, is always mortal, as indicating an extreme Straitneſs of the Organs of Reſpiration, by which Nature is in imminent Danger of Suffocation; or elſe an utter Decay of Strength, and Extinction of the natural Faculties, for which Reaſon it is never obſerv'd but in dying Perſons. It is, alſo, never without ſome other precedent, attendant, or ſubſequent mortal Symptoms, for this kind of Reſpiration never appears without ſome other deadly Sign; whence it is ſaid by the Author of the *Coac.* 260. that "The worſt Kind of Reſpira-"tion, and what ſhews Death to be juſt at hand, is the ex-"tended, urgent and obſcure." We obſerved that tho' this Sign alone was a ſure Prognoſtic of Death, yet it was always attended with other deadly Signs; as it was, for inſtance, in the Wife of *Olympiades*, 7 *Epid.* 49. of whom it is ſaid, "That her Eyes were caſt down, and that ſhe drew her "Breath in the ſublime Manner through her Noſtrils; that "ſhe was ill-coloured; and juſt before ſhe died, had a Sweat "about her Feet and Legs." Such, alſo, was the Caſe of dying *Ariſtocrates*, 52. of whom *Hippocrates* ſays, "That to-"wards Night his Reſpiration was ſublime, that he had a "ſmall Sweat about his Forehead, his lower Parts were cold, "and he was reſtleſs."

To the other mortal Kinds of Reſpiration, we add the ſobbing, [κλαυθμώδης] but ſmall and rare Reſpiration, agreeably to the Judgment of *Hippocrates*, 6 *Aph.* 54. "In acute Diſeaſes attended with a Fever, a ſobbing Reſpiration is bad." An interrupted Reſpiration is no leſs pernicious, but this perhaps is the ſame with the former, which Opinion ſeems to be favour'd by *Galen* in his *Comment* on the before-cited *Aphoriſm*, where he ſays that "Children when they cry ſeem to draw "in their Breath for a-while, then to have their Inſpiration "interrupted, their Thorax ſtanding the mean time un-"mov'd, and afterwards to draw in a freſh Supply of Breath "to what was wanting;—— this is occaſioned ſometimes "from a Wearineſs of the Faculty, ſometimes from a Hard-"neſs of the Organs, and ſometimes from both Cauſes in "Conjunction. It may proceed, alſo, from a convulſive "Diſpoſition of the Muſcles of the Breaſt." But whatever be the Cauſe, this ſobbing and interrupted Reſpiration in acute Diſeaſes is bad; and if the Strength of the Patient happens at the ſame time to be very much exhauſted, pernicious in the higheſt Degree. Such a Reſpiration is alſo but ſmall and ſlender, and in acute burning Fevers indicates a Hardneſs and convulſive Diſpoſition, and is always bad, as well as Convulſions from the ſame Cauſe, which is a Dryneſs of the nervous Parts. Of this Kind of Reſpiration it is, alſo, that *Hippocrates* ſpeaks, *Aph.* 67. where he ſays, "That an im-"pinging or colliding, [περικόπτον, which *Galen* explains by "*interrupted*] Reſpiration is bad; for it indicates Convul-"ſions." And Convulſions excited by Dryneſs in very hot Diſeaſes are incurable, and conſequently in acute Diſorders mortal. But that we may rightly form our Prognoſtics concerning the Event of a Diſeaſe, from ſuch Convulſions, we are to conſider the Signs which precede, accompany or ſucceed them; and if none of theſe Signs are bad, we are to ſuſpend our Judgment of the Fate of the Patient. *Proſper Alpinus de Præſag. Vit. et Mort.* p. 252.

RESSELLA. An obſcure Term in *Paracelſus*, which he explains no farther than by telling us, that *Reſella* is what removes Heat, and *Aſſa* what promotes it.

RESTA BOVIS. Reſt-Harrow. See ANONIS.

RESTINCTIO. *Rulandus* defines Chymical Reſtinction, A Gradation by which Subſtances heated red hot, are extinguiſhed in an exalting Liquor, and thus brought to their greateſt Perfection.

RESTITUTIO, Reſtitution, in Surgery, is the Reduction of a luxated or fractur'd Limb.

RESTORATIO. The ſame as ANALEPSIS.

RESUMPTIVA. Reſtoratives.

RESUSCITATIO. Reſuſcitation, in Chemiſtry, is the Reſtoration of any diſguiſed Body to its original Form.

RETE MIRABILE. A Congeries of Blood Veſſels in the Brain is thus called. See CEREBRUM.

RETENTA. Things retain'd in the Body; or which ought to be retain'd in a State of Health.

RETEPORA. A Name for the *Eſchara Rondeletii*.

RETICULARIS, or RETIFORMIS. Reticular, or like a Net.

RETICULUM. The ſecond Ventricle of a ruminating Animal.

RETINA. The Expanſion of the Optic Nerves on the internal Surface of the Eye, is thus called. See OCULUS.

The *Retina* is liable to two Sorts of Diſeaſes; the firſt is a Separation of ſome Parts of this Membrane from the Choroides. At the Place where this Separation is made, there follows an Elevation or Fold, which ſtops the Light, and hinders its Paſſage to that Part of the Choroides, which is cover'd by this Fold; this occaſions a ſort of a Shade, which the Patients ſee in the Air. The ſecond Diſeaſe of the *Retina* is an Atrophy or Waſting of that Membrane.

The Cauſe of the firſt Diſeaſe may, with a great Shew of Reaſon, be thus accounted for, that the Blood Veſſels of the *Retina* become varicous; for it is eaſily conceived, that the Dilatation of theſe Veſſels may ſeparate the *Retina* from the Choroides, in that Part which anſwers the dilated Veſſels. I have always obſerved this Diſeaſe to proceed from a Cold in the Head, after ſome violent Exerciſe, or whatever elſe may have put the Blood into a violent Motion. Hence I infer, that the external Cold, by obſtructing the Pores of the Skin, has ſtopt the Perſpiration of ſome Part of the Humours rarefied in the Blood Veſſels, on the Surface of the *Retina*, which, from the Fineneſs of its Texture, is damaged by this Infarction, after the above-mention'd manner. I call this Diſeaſe a Separation of the *Retina* from the Choroides. As this Membrane fills a conſiderable Space in the Eye, this Separation is often made in ſeveral Places; ſo that the Signs of this Diſeaſe anſwer to the Number of the Parts ſeparated.

Its Signs are certain Appearances in the Air, more or leſs diſtant from the Patient's Eyes. They are a kind of Shadows of different Figures, modified according to the Size and Form of the Parts of the *Retina*, which is ſeparated.

As to the Prognoſtic, there is no Danger of loſing the Sight in this Diſeaſe; it is only troubleſome to the Patient. As this Diſeaſe begins with the ſame Signs as a Cataract, one Diſorder may be taken for the other; but to prevent the like Miſtake, we ſhall propoſe the Difference. In a Cataract the Sight ſhortens and decreaſes daily; whereas, in the preſent Diſeaſe, the Sight continues the ſame both in Quickneſs and Extent.

Though Remedies do not perfectly cure this Diſeaſe, and that the Perſons once attack'd with it ſee ſome of theſe Shades all their Life their Number and Compaſs, in Breadth may be ſtill be leſſened. The following Remedies are of Service; ſuch are Broths made of Crabs, repeated Purges, Eye-Bright Tea drunk in the Morning, Powder of Vipers, Wood-Lice, and Eye-Bright mixed together.

In an Atrophy of the *Retina*, as the Rays of Light are not ſufficiently modified in that Membrane, they make too vivid an Impreſſion on the Choroides, which is very detrimental to it. Hence enſues a confuſed Viſion; ſo that the Patients, at the firſt Look, can ſee very well; but if they continue to read any time, or to look at any ſhining Object, they feel a ſudden Wearineſs in their Head, and a Dimneſs in their Sight, which obliges them to cloſe their Eyes; then opening them a Moment after they ſee, as at the firſt Look, but for a ſhort Time.

Embroiderers, Stocking-Weavers and Shoemakers are ſubject to this Diſeaſe; the firſt becauſe the Brightneſs of the Gold, Silver, and other Colours, damages the Sight by the lively Impreſſion it makes on the Eye; and the Shoemakers, in order to find the Hole made by their Awl, to run the End through it, by this continual Attention fatigue and weaken their Sight ſo much that they are obliged to quit their Trade. Theſe People can work but a few Days in the Week.

There are ſome People, though they do not work as theſe Handicrafts, cannot, however, make uſe of their Sight a Quarter of an Hour, but their Head is diſordered; of thoſe I chiefly treat.

No Remedies cure this Diſeaſe. Nothing avails, but reſt and little Exerciſe of the Sight. All thoſe Perſons who are employed at fine or ſhining Work, if they have a mind to continue, muſt make uſe of green Spectacles.

RETINACULUM. A Chirurgical Inſtrument, uſed in Caſtration, and the Operation for a *Hernia*, in order to prevent the Inteſtines from falling into the *Scrotum*.

RETORTA. A Retort; a chymical Veſſel with a large Belly, and crooked Neck, reſembling a Horn; for which reaſon the *French* call it *Cornüe*.

RETRACTIO. The ſame as ANTIPASIS.

RETRAHENS AURICULAM. The Name of a Muſcle called alſo *Triceps Auris*, becauſe it has ſometimes three Beginnings. M. *Du Verney* ſays it is compoſed of five or ſix fleſhy Fibres, which have their Origination from the ſuperior and Fore-part of the *Apophyſis Maſtoides*, and deſcend obliquely to their Inſertion in the Middle of the *Concha Auriculæ*, *Cowper*.

RETRANSMUTATIO. When a Subſtance originally in a fluid, but afterwards in a ſolid State, is again reduced to a Fluid, this is called, by *Paracelſus*, a Retranſmutation.

RETRIMENTUM. An Excrement, or Recriment of Metals, or any other Subſtance.

RETROCESSIO. The ſame as EPANACLESIS.

REVERBERATIO. The Calcination of a Body in a Reverberatory Heat.

REVERBERATORIUM, or REVERBERIUM. A Reverberatory. See IGNIS.

REVERSIO. A Relapſe.

REVIVIFICATIO. Revivification. The ſame in Chemiſtry as RESUSCITATIO.

REVIVISCENTIA. The ſame as REVIVIFICATIO.

REVOCATIO. The ſame as EPANACLESIS.

REVULSIO. Revulſion. See INFLAMMATIO, and PHLEBOTOMIA.

REX. A King. The Invention of ſeveral Branches of Phyſic is aſcribed to Kings and Heroes, ſome of which in ancient Times were very ſkilful in this Science. I don't know that this Word relates farther to Medicine, unleſs the Royal Touch could be thought medicinal; in which there is nothing ſo wonderful, as that a Man of the celebrated *Hiſeman*'s Underſtanding, ſhould treat it as a Reality.

RHA. See CENTAURIUM.

RHABARBARUM. Offic. J. B. 11, 989, 1075. Ger. 316. Ogilb. Chin. 1. 212. *Rhabarbarum Officinarum*, C. B. P. 116. *Rhabarbarum genuinum Officinarum*, Park. Theat. 156. *Rhabarbarum ſiccatum*, Ger. Emac. 393. *Rhabarbarum lanuginoſum, ſive Lapathum Chinenſe longifolium*, Munt. Herb. Brit. 196. Raii Hiſt. 1077. *Rhabarbarum, ſive Rheum. Officinarum*, Geoff. Tract. 296. TRUE RHUBARB.

We do not certainly know the Plant of which Rhubarb is the Root; it is probably a Species of *Lapathum*, called by *Herman*, *Lapathum Sinenſe*. It is brought from *China*, but *Muntingius* pretends that he cultivated it in *Holland*, in his Book *De Vera Herba Britannica*.

It is one of the beſt and mildeſt Catharticks in the whole *Materia Medica*; it operates very well on the Bile, and on all the Viſcera of the Abdomen, and at the ſame time ſtrengthens the nervous Fibres. On theſe Accounts, it is proper in weak Stomachs and Inteſtines. It is given in Subſtance from twelve Grains to half a Dram; and in Infuſion, from half a Dram to a Dram and a half; and in a ſmall Doſe, it becomes an excellent Alterative. It purges the Bile very effectually, and has a greater Force than any other Purgative, in opening Obſtructions of the Liver. It is found by certain Experience, to evacuate the Bile, preferably to any other Fluid. On this account, it is the Panacea of Children; and alſo becauſe it ſtrengthens the Stomach, and carries off all ſorts of Matter that ſtagnate therein. It is a very good Remedy for Worms, and is given to Children ſubject to chronical Diſeaſes, in a Ptiſan, called Rhubarb-Water. The Uſe of Rhubarb is, however, dangerous, when the Kidneys or Bladder are ſuſpected to be inflamed, becauſe it heats conſiderably; and for this Reaſon it is improper in Hæmorrhages. It is very good in a Looſeneſs, becauſes it purges and ſtrengthens at the ſame time. In Cachexies, it ought to be given in ſmall Quantities for a conſiderable time. *Geoffroy*.

There are two Sorts of *Rhabarbarum* ſold; an Oriental, imported from *China*; and this is ponderous, diſtinguiſhed by gold-coloured and red Veins, bitteriſh and aſtringent, ſweet-ſcented, rather of a yellow Colour; and being moiſtned, ſtains the Hand with a Colour like that of Saffron; and is much eſteemed for its Virtues. The other Sort comes from *Ruſſia*, and is ponderous, and of a darker Yellow, and leſs valued than the other.

Rhubarb is a mild and gentle Purger of yellow Bile, and viſcous and tartareous Phlegm from the Stomach and firſt Region. It is a Specific for the Liver cures a Jaundice, and for its aſtringent Quality is commended beyond other Medicines, for all Diſorders proceeding from Relaxation, as a Diarrhæa, Dyſentery, and the like.

This Root was unknown to *Dioſcorides* and *Galen*; and therefore ſome are very erroneous, in confounding the *Rha*, or *Rheum*, of the Ancients, with our Rhubarb; for the *Rheum* of *Dioſcorides* has leſs of a cathartic Quality, and wants the Characters of the true Rhubarb, which is a compact Subſtance, ponderous and dry, of a bitter Taſte and acrid Smell, of a reddiſh Colour on the Outſide, and of a light Red inclining to Yellow within, with ſome Veins of a deeper Colour, and being macerated or chew'd, dyes of a Saffron-Colour. *Rapontic*, on the contrary, is not of a cloſe but thin Subſtance, and not ponderous but light, and wants the ſweet Scent of Rhubarb. *Dale*, from *Le Brun*.

A Decoction of the Leaves very gently evacuates the Belly, reſiſts the Scurvy, and ſtrengthens the ſolid Parts. Some old Perſons ſay, that the Root of this Plant is the only Cathartic which ought to be given in Diſeaſes; and one of eighty Years in particular tells us, that he was deceived in all other Medicines but Rhubarb. Some aſſert it to be effectual for correcting a vitiated Bile, and for removing chronic Diſorders which owe their Riſe thereto. The Root conſiſts of ſubtile Parts, whence it penetrates through the thinner Parts of the Blood, and tinges the Blood with the Colour of Saffron; for if you take ten Grains of it in the Morning, it will communicate its Saffron-like Colour and Smell to the Urine, which proves it to be of very tenacious Parts with reſpect to Colour. Hence it becomes effectual for depurating the Blood from thinner Impurities, for cleanſing the Kidneys from Sand and Gravel, and for reſolving lubricous, grumous, and pituitous Matter. It is an excellent Remedy in all Extravaſations and Stagnations of Blood; and it is ſaid to be of extraordinary Efficacy in the Stone, Jaundice, Dropſy, and other Affections of the Liver, proceeding from a vitiated Bile. It is commended alſo againſt Inflammations, Weakneſs of the Stomach, and all Pains incident to it; for Convulſions, for Diſorders of the Spleen, Liver and Kidneys; for racking Pains of the Bladder, and Diſorders of the Thorax; for Diſtenſions of the Hypochondria, Affections of the Uterus, and the Sciatica; for ſpitting of Blood, attended with Difficulty; for the Hiccups, Dyſentery, Cæliac Paſſion; to prevent the Return of the Fits in Fevers, and for the Bites of venomous Animals; outwardly applied with Vinegar; it removes the livid Marks of Blows, and the Impetigo. The Root is a very good Remedy in Contuſions; cleanſes the firſt Paſſages, ſtrengthens the Inteſtines after purging, and is an admirable Cathartic for Infants whoſe Fibres are too lax. It deſerves all the high Commendations beſtowed on it for the Dyſentery, Diarrhæa, and all Diſeaſes proceeding from a ſchirrous and cancerous Matter, being exhibited to the Quantity of two Scruples. Ten Grains given every Morning, ſo as to be juſt enough to purge, is the beſt of Deobſtruents in inveterate, hypochondriacal and ſcorbutic Diſeaſes, and reſtores the Strength of the Viſcera, and the obſtructed Fibres. The Virtue of the Root conſiſts in the Mixture of a ſubtile and acrimonious Salt, with mucilaginous and earthy Particles; thoſe ſaline and acrimonious Particles, in proportion as they are more or leſs diſengaged from the Mixture of mucilaginous and earthy Particles, in which they ſtuck and were intangeld, the more or leſs they exert of their ſtimulating Force. Sometimes they excite ſo great a Commotion, as to preſs upon the Liver itſelf, and eſpecially the Gall-Bladder, whence may follow a double Excretion of Bile; which proves the Root of extraordinary Efficacy in the Jaundice, as was before obſerved. Its cathartic Virtue conſiſts in its Salt, and not at all in its Reſin or oleous Particles, as appears from its Tincture, which is extracted with Water. Now it is clearly demonſtrated from Chymiſtry, that Water can never reſolve reſinous nor oleous Subſtances; and beſides, the Tincture extracted by Spirit of Wine is not ſo potent a Cathartic as what is extracted with Water; nay the Water itſelf, after Mixture, does not become milky, as it happens in all other Tinctures, which are extracted from oily and reſinous Subſtances; and it is further to be obſerved, that theſe ſaline Particles may be ſo diſſipated or diſſolved by the Quantity of Liquids, as to be incapable of exerting their Force. The Root when dried up with Age, loſes its Acrimony, and all its cathartic Virtue; as it does, alſo, in Boiling. The Smell of it in ſome provokes to Stool. It is of Service in a Gonorrhæa, by allaying the Heat of Urine, expelling the Malignity, and ſtopping the Flux. It is uſually preſcribed in Subſtance from half a Dram to two Drams; the Doſe of the Extract is two Drams, of the Tincture one Dram. The Root roaſted or dried is aſtringent, and as effectual in a Dyſentery as Terra Sigillata; and being mixed with Nutmeg and Laudanum, proves an excellent Remedy for an immoderate Flux of the Belly, its aſtringent Virtue diffuſing itſelf into all Parts. *Pechlius* employed it for Hæmorrhages of the Noſe, and ſuch like Caſes. The Root is ſometimes hurtful in a Vertigo; it deſtroys Worms, and is an Ingredient in many officinal Compoſitions. *Hiſt. Plant. aſcript. Boerhaave.*

Alexander Trallianus, in the Opinion of Dr. *Friend*, was the firſt Phyſician that mentioned Rhubarb, who recommends it in a Weakneſs of the Liver, and a Dyſentery, tho' Mr. *le Clerc* tells us, that the *Arabians*, indeed, in tranſlating *Dioſcorides* and the *Greek* Phyſicians, confound this Root with the *Rhaponticum*, and aſcribe the Virtues, which the Ancients have obſerved in this latter, to what is properly the *Rhabarbarum*; as may be evident to any who will look into the Deſcription, which *Rhazes* gives of it. And I believe *Alexander* himſelf, tho' 'tis plain Rhubarb was known in his Time, was in the ſame Miſtake; for he mentions it only as an Aſtringent, as the elder *Greeks* deſcribe the *Rhaponticum*, without the leaſt Hint of its purging Virtue. *Paulus* ſeems to be the firſt who takes any Notice of the purging Faculty in the *Rheum*, (he calls it ſimply ſo) and tells us, how we may make ſome laxative Medicines ſtronger, by the Addition of this. And *P. Alpinus* ſays, that ſome have obſerved, that even the *Rhaponticum* would ſometimes purge, tho' in a leſs Degree than Rhubarb. The modern *Greeks* gave this Root the Name of *Barbaricum*, not from the Place of its Growth, but from the Place it was imported to; for the Country in the *Upper Æthiopia* was called *Barbaria*, as *Salmaſius* well obſerves, from its lying upon the *Sinus Barbaricus*, in which were many great Emporiums, particularly *Rhapta*, the Metropolis of this Region. This Gulf, upon the Eaſt, joins with the *Indian* Ocean; and therefore *Actuarius*, and after him *Myrepſus*, calls this Plant Ῥῆον βάρβαρον. No doubt, in thoſe times it was imported this way to *Alexandria*, and ſo might be known to theſe latter *Greek* Phyſicians. However, I muſt obſerve, that *Salmaſius* does not take notice of *Alexander*'s mentioning Rhubarb; but quotes *Paulus* for it, who does not mention it, but only in general ſpeaks of, and deſcribes the *Rha*. *Garcias ab Horto*, Phyſician to the *Spaniſh* Viceroy, tells us, he had learnt in *India*, that all the Rhubarb which was imported thither, and into *Perſia*, grew in *China*; that it was brought thither by Sea and Land; but that the latter way of bringing it over *Tartary* to *Ormuz*, was much the beſt; for by Sea-Carriage, 'twas more ſubject to rot. *Friend's Hiſtory of Phyſic.*

RHABDOIDES. Ῥαβδοειδὴς. A Name for the Sagittal Suture.

RHACHIA, or RECHIA. Ῥαχία, or Ῥαχίη. An Overflowing or Redundance of Humours. *Galen. Exegeſ.*

RHACHIS. Ῥαχις. The Spine of the Back.

RHACHIAGRA, from Ῥαχις. The Spine of the Back, and ἄγρα, a Prey. A Species of Gout fixed upon the Spine of the Back.

RHACHITÆ, or RHACHIÆI. Ῥαχῖται, or Ῥαχιαῖοι. The Muſcles belonging to the Spine of the Back.

RHACOS. Ῥάκος, from ῥήσσω, to break or tear. A Rag uſed by Surgeons in dreſſing Wounds.

RHACOSIS, Ῥάκωσις, is a Relaxation of the Skin of the Scrotum without that of the contained Bodies, being an Affection very indecent to the Sight.

The Method of Cure uſed by *Leonides*, was to lay the Patient upon his Back, and to cut off the ſuperfluous Skin againſt a Board, or a Piece of hard Leather, after which he ſewed up the Wound. But *Antyllus* uſed to take up the ſuperfluous Skin with three or four Stitches of a Needle, and then with a Knife or ſharp Pair of Sciſſars, cut off what was without the Stitches; then ſecuring the Place with a Suture, he cured it as he did other bleeding Wounds. *P. Æginet. Lib.* 6. *Cap.* 67.

RHÆBOS. RHÆBOIDES. Ῥαιβὸς, Ῥαιβοειδὴς. Incurvated, or intorted. *Hippocrates.*

RHAGADES. Fiſſures, or Chaps.

RHAGADIÆ. Apoſtemations of the *Pudenda*. *Rulandus.* Or Abſceſſes of the Knees. *Paracelſus.*

RHAGADIOLUS.

The Characters are;

The Calyx conſiſts of narrow-channel'd Leaves, which, after the Flower is fallen off, become membranaceous Vaginæ or Sheaths, each containing a ſingle Seed.

Boerhaave mentions two Sorts of *Rhagadiolus*, which are,

1. Rhagadiolus; alter. *Cæſalp.* 511. *Hieracium Stellatum.* J. B. 2. 1014. Raii Meth. 31. *Intybus, ſive Endivia lutea; humilis, ſtellato ſemine.* M. H. 3. 53.

2. Rhagadiolus; Lampſanæ foliis. *T. C.* 36. *Boerh. Ind. Alt. Plant.* Vol. I. p. 92.

It has its Name, perhaps, from the *Rhagades* or Fiſſures of the Anus, Uterus, and Hands, which it is ſaid to cure. *C. Bauhine* gives it the Name of *Hieracium Foliatura Siliquoſa. Hiſt. Plant. aſcript. Boerhaave.*

RHAGADIOLUS, is alſo a Name for the *Hedypnoſis*; *Annua.*

RHAGE. Ῥαγὴ. A Fiſſure, or Chap.

RHAGES. Ῥάγες. The Stones of Grapes; but the Extremities, or Pulp of the Fingers, are called by this Name. *Caſtellus.*

RHAGIUM. The Name of a venemous Inſect, mentioned by *Ætius, Tetrabib.* 4. *Serm.* 1. C. 18.

RHAGOIDES. An Epithet for the *Tunica Uvea* of the Eye.

RHAMMA. Ῥάμμα. The ſame as ACIA.

RHAMNOIDES.

The Characters are;

It has the prickly or thorny Appearance of the *Rhamnus*; the Flower, which grows only on the Male Plant, is male, apetalous, and conſiſts of a few Stamina, which ariſe from a bifolious Calyx. The Fruit on the Female Plant conſiſts of a monoſpermous Berry, containing a roundiſh Seed.

Boerhaave mentions three Sorts of *Rhamnoides*; which are,

1. Rhamnoides; florifera; ſalicis foliis. *T. Cor.* 53. *mas.*

2. Rhamnoides; fructifera; ſalicis foliis; baccis aureis; *T. Cor.* 53. fœmina.

3. Rhamnoides; fructifera; ſalicis foliis; baccis leviter flaveſcentibus. *Tourn. Coroll.* 53. *Boerh. Ind. A.* 2. 174. *Raii Synop.* 3. 445. *Oleaſter Germanicus*, Offic. *Rhamnus ſecundus Cluſii*, Ger. Emac. 1334. *Rhamnus primus Dioſcoridis Lobelio, ſive littoralis*, Park. Theat. 1006. *Rhamnus ſalicis folio anguſto, fructu floreſcente*, C. B. P. 477. Raii Hiſt. 2. 1592. *Rhamnus, ſive Oleaſter Germanicus*, J. B. 1. 33. SALLOW-THORN.

It grows in ſandy maritime Places, flowers in *June*, and the Fruit is ripe in *September*. An acid Rob is prepared of the Berries, which is recommended for the Dyſentery. *Dale.*

RHAMNUS.

The Characters are;

The Flower is monopetalous, Funnel-ſhaped, and tetrapetaloidal or pentapetaloidal. The Piſtil, or Pointal, becomes a ſoft Berry, full of Juice, and full of four callous Seeds, which are gibbous on one Side, and flat on the other.

Boerhaave mentions eleven Sorts of *Rhamnus*, which are,

1. Rhamnus; Catharticus. *J. B.* 1. 55. C. B. P. 478. *Raii Hiſt.* 2. 1625. *Synop.* 466. *Tourn. Inſt.* 593. *Boerh. Ind. A.* 2. 212. *Rhamnus Catharticus, Spina Cervina*, Offic. *Rhamnus ſolutivus, ſive Spina infectoria vulgaris*, Park. Theat. 243. *Spina Cervina Geſneri & Officinarum*, Volck. Flor. Nor. 368. *Cervi Spina*, Rapp. Flor. Jen. 74. BUCK-THORN.

This is a Hedge-tree or Buſh, whoſe Branches are full of long ſtiff Thorns, and yellowiſh green Leaves, about as big as the Sloe-tree, more neatly ſerrated about the Edges. The Flowers grow ſeveral together, being ſmall, four-leaved and yellow, which are ſucceeded by little round Black-berries when ripe, yielding a purpliſh bitter Juice, and having three or four angular Seed. It grows in Woods and Hedges, and flowers in *June*, the Berries being ripe about the latter End of *September.*

The Juice of the Berries purges ſerous, watery Humours pretty briſkly, and is good againſt the Dropſy, Gout, Jaundice, and Scurvy, and very ſerviceable againſt the Itch, and all manner of Eruptions on the Skin.

The only Officinal Preparation is the *Syrupus è Spina Cervina*, Syrup of Buck-thorn. *Miller's Bot. Offic.*

By the Chymical Analyſis, the Berries yield a great deal of acid Phlegm and Oil, a little fixed Salt and Earth: They are purgative, and very good to remove ſerous Humours in chronical Diſeaſes; by which it relieves thoſe who have the Gout, Palſy, Cachexy, Sciatica, and Rheumatiſm. Take a Dram, or a Drachm and a half of its Berries, powdered and mixed with a little Conſerve of Orange-Flowers. They boil fifteen or twenty Berries in common Broth, adding half a Dram of Cream of Tartar; ſtrain it through a Cloth, and give it the Patient to drink; ſome mix with it two Drams of Tincture of Steel, or boil half an Ounce of Iron-Ruſt in a Rag tied up in a Knot, for the Green-Sickneſs. The moſt common Uſe of theſe Berries is to make a Syrup of them. The Doſe is from one Ounce to two, and even to three, when neceſſary; but it is proper to eat ſome Pottage after taking it. *Martyn's Tournefort.*

The Berries of this Shrub appear under three Colours; in the firſt Place, being gathered in the Time of Harveſt, then dried, bruiſed, and macerated in Water and Alum, they appear of a yellow, or rather a Saffron like Colour. Secondly, in Autumn, when through Maturity they have acquired a Blackneſs, being gathered, bruiſed, and kept in a Glaſs-Veſſel, they repreſent a beautiful green Colour, which they call a SAP-GREEN. And, laſtly, if they be gathered about the Feaſt of St. *Martin*, at which Time they ſtill adhere to the Tree, they appear, according to *Tragus*, of a Scarlet-Colour. *Raii Hiſt.*

SYRUPUS DE SPINA CERVI.

Syrup of Buck-Thorn.

The College-Diſpenſatory orders it to be thus made.

Take of the Juice of ripe and freſh Buck-Thorn Berries, gathered in the Month of *September*, two Pints: Let the Fæces ſubſide, and to the clear Liquor add of Cinnamon and Nutmeg, each three Drachms; and let them ſtand in Maceration for the Space of a whole Day; then ſtrongly preſs it out, and put to it one Pound and an half of white Sugar, to be boiled up to the Conſiſtence of a Syrup in a Bath-heat.

This has not, till lately, been received by the College into their Diſpenſatories. The Spices are commonly tied cloſely in a thin Bag, and ſuſpended in the Syrup while boiling to a Conſiſtence.

The *Edinburgh Diſpenſatory* directs it in the following manner.

Take of the clarified Juice of ripe Buck-Thorn Berries, three Quarts; brown Sugar, four Pounds; and with a gentle Fire boil them to a Syrup; and while it is yet warm, mix therewith a Dram of the diſtilled Oil of Cloves, received upon a little Sugar.

To add the Corrector here in the Form of a chymical Oil, ſaves the Trouble of ſteeping the Spices ordered for that purpoſe in the *London Diſpenſatory*, and anſwers the End more certainly.

Sydenham obſerves, that Syrup of Buck-Thorn alone evacuates Water plentifully and little elſe, without diſturbing the Blood, or rendering the Urine high-coloured, as other Purgatives generally do, and has only one bad Quality, as occaſioning great Thirſt during the Operation. But if it be given, even in the largeſt Doſe, to ſuch as are difficult to purge, it will neither give many Motions, nor carry off enough of Water.

I remember well, adds the ſame celebrated Author, for it was my firſt dropſical Patient, that I was called about twenty ſeven Years ago to Mrs. *Saltmarſh* in *Weſtminſter*, who had the Dropſy in the greateſt Degree I have yet ſeen, her Belly being ſwelled to an incredible Size. I gave her an Ounce of Syrup of Buckthorn before Dinner, according to the Cuſtom of that Time, and it brought away an almoſt inconceivable Quantity of Water, without cauſing any Diſturbance or Faintneſs. Encouraged by this Succeſs, I gave it every Day, interpoſing only a Day or two occaſionally, when ſhe ſeemed weaker than ordinary. And the Water being by theſe Means

carried off by Degrees, the Swelling of the Belly diminiſhed daily, and ſhe recovered.

And now being young and unexperienced, I could not help thinking that I was poſſeſſed of a Medicine effectual for the Cure of any kind of Dropſy; but in a few Weeks I diſcovered my Error. For being called afterwards to another Woman, afflicted with the Dropſy, which ſucceeded an inveterate Quartan, I gave this Syrup, and repeated it frequently, increaſing the Doſe by Degrees; but having ineffectually attempted to evacuate the Water, inaſmuch as the Medicine did not operate, the Swelling of the Belly increaſed, and ſhe diſmiſſed me; and if my Memory does not fail me, recovered by the Aſſiſtance of another Phyſician, who adminiſtered more efficacious Remedies.

The uſual Doſe is an Ounce, or an Ounce and an half.

2. Rhamnus; ſpinis oblongis; Cortice albo Monſpelienſium. *J. B.* 1. 6. 31.

3. Rhamni primi; altera Species. *Cluſ. H.* 109.

4. Rhamnus; ſpinis oblongis; flore candicante, *C. B. P.* 477. *Boerh. Ind. A.* 2. 212. *Raii Hiſt.* 2. 1592. *Rhamnus albus*, Offic. *Rhamnus primus Cluſii*, Ger. Emac. 1334. *Rhamnus ſecundus Monſpelienſium ſive Primus Cluſii*, Park. Theat. 1005. *Rhamnus Cortice albo Monſpelienſis.* J. B. 1. 31. RAM-THORN WITH WHITE FLOWERS.

This is a thorny Shrub, with a ſmaller Fruit, conſiſting of a humid Pulp, incloſing a ſingle Seed.

It is a Native of *Spain*, *Portugal*, and other ſouthern Countries, flowers in *May*, and the Fruit is ripe in Autumn. A Catapaſm of the Leaves, as *Dioſcorides* ſays, is good for an Eryſipelas, and ſpreading Ulcers.

5. Rhamnus; Hiſpanicus; folio Buxi; minor, *T.* 593. *Lycium, Hiſpanicum, folio Buxi.* C. B. P. 478.

6. Rhamnus; Afer; folio Pruni ſylveſtris leviter ſerrato; ſpinis brevioribus.

7. Rhamnus; Americanus; folio Buxi rotundo; ſpinis alternis.

8. Rhamnus; Afer; ſpinis longis; cortice albo; fructu cæruleo. *Ind.* 246.

9. Rhamnus; Afer; folio Pruni longiori, ſubrotundo; flore candicante; ſpinis longiſſimis. *Lycium Pruni folio ſubrotundo, flore candicante. Ind.* 246.

10. Rhamnus; Hiſpanicus; folio Buxi ampliori. *T.* 593.

11. Rhamno ſimilis; Africana; fructu triloculari; folio Pyracanthæ. *Lycium Æthiopicum, Pyracanthæ folio.* H. A. 1. 163. *Boerh. Ind. Alt. Plant. Vol.* 2.

The Berries of the firſt Species are gathered in the End of *September*, or Beginning of *October*, and their Juice expreſſed while they are freſh, and boiled up with Sugar, makes what they call Syrup of Buckthorn, which is an excellent Cathartic, and a Specific againſt a Dropſy, but excites a great Thirſt. It is commended by *Hippocrates* for its purgative Quality, but is of no Virtue, as he ſays, on other Accounts. The Berries purge Bile and Phlegm, but principally ſerous Humours, whence it is of good Service in a Cachexy, Rheumatiſm, Arthritis, and Palſy. The Decretion of the Berries, with an Addition of aperient Tincture of Steel, is a very good Medicine for the Chloroſis. *Hiſt. Plant. Aſcrip. Boerhaave.*

RHAMNUS is alſo a Name for the *Paliurus*, and alſo for the *Rhamnoides*; *fructifera Salicis foliis*; *baccis leviter flavescentibus.*

Rhamnus tertius, *Dioſcorides*, a Name for the *Meſpilus*; *ſpinoſa*; *Pyrifolio.*

Beſides the foregoing Species of *Rhamnus*, *Dale* mentions the following:

Rhamnus niger, Offic. *Rhamnus niger Theophraſti*, Park. Theat. 1007. Raii Hiſt. 2. 1593. *Rhamnus tertius Cluſii*, Ger. 1152. Emac. 1334. J. B. 1. 34. *Rhamnus tertius, flore herbaceo, baccis nigris*, C. B. P. 477. Tourn. Inſt. 593. BLACK RAM-THORN.

It is ſometimes found in our Gardens, and flowers in *May*. The Decoction of the Fruit is good in Relaxations and Weakneſſes of the Limbs, and for the Pains of the Gout. *Dale.*

RHANTERES. ῥαντῆρες. The internal Angles of the Eyes.

RAPHANEDON. ῥαφανηδον. The ſame as CAULEDON.

RAPHANELÆON. Oil of Radiſh-Seeds.

RHAPHANUS. See RAPHANUS.

RHAPHE. ῥαφὴ. A Suture.

RAPHIS. ῥαφὶς. A Needle for Chirurgical Uſes.

RHAPONTICUM.

Rhaponticum Offic. Alpin. Exot. 187. *Rhaponticum Thracicum*, Bocc. Muſ. 127. *Rhaponticum folio Lapathi majoris glabro, Rha & Rheum Dioſcoridis*, C. B. P. 116. *Rha verum Antiquorum*, Ger. Emac. 393. Raii Hiſt. 1. 170. *Rhabarbarum Officinarum*, Elem. Bot. 75. *Rhabarbarum ſortè Dioſcoridis & antiquorum*, Tourn. Inſt. 89. *Rhabarbarum rotundi folium verum ſive Lapathum ſativum rotundi folium ampliſſimum flore albo, vel Rheum antiquorum*, Munt. Herb. Brit. 192.

Rhabarbarum Muſcoviticum, Mont. Plant. Gen. p. 6. *Rhabarbarum Witſoniarum*, Ogilb. Chin. 2. 680. quoad. Fig. *Lapathum præſtantiſſimum*; *Rhabarbarum officinarum dictum.* Boerh. Ind. A. 2. 84. *Lapathum exoticum, folio ampliſſimo inſar foliorum Braſſicæ*, Rupp. Flor. Jen. 44. *Hippolapathum maximum rotundi folium exoticum, ſive Rhaponticum Thracicum, ſed verius Rhabarbarum verum*, Park. Theat. 154. TRUE RHAPONTIC.

This has a large thick Root, at the Head, and divided into many Branches, of a dark Brown on the Outſide, and a deep yellow Colour within, of a bitteriſh Taſte. From this Root ariſe ſeveral large, ſomewhat crumpled green Leaves, roundiſh but pointed at the End, of a ſouriſh Taſte, growing on reddiſh Foot-ſtalks. From among theſe ariſes a thick Stalk, three or four Foot high, having ſmall Leaves, and a numerous Company of white, ſtaminous, ſix-leaved Flowers, ſucceeded by large, ſhining, triangular, brown Seed. It is planted in Gardens. The Root of this Plant, if carefully dried, pretty much reſembles the fineſt *Turkiſh* Rhubarb, eſpecially the Heads, having the ſame reddiſh Veins, and may deceive thoſe who are not very well acquainted with the Difference. This is what ought to be uſed in the Shops, as being the true Raphontic; what the Druggiſts uſe formerly to ſell for it, being the Root of the *Rhaponticum Folio Helenii incano* C. B. which is a Species of the great Centaury, and of far leſs Virtue than this.

Rhapontic, as to its purgative Quality, is much weaker than Rhubarb; but is accounted more reſtringent, and good for Fluxes and Weakneſs of the Stomach, ſpitting of Blood, and making bloody Urine. It is likewiſe good againſt the Bites of venomous Creatures. It is an Ingredient in the *Theriaca Andromachi. Miller's Bot. Off.*

This Root is very like Rhubarb, but may be diſtinguiſhed from it by its leaving a mucous Taſte in the Mouth, its Mucilage being diluted by the Saliva; and becauſe when it is cut it appears regularly marbled, of a red, white or yellow Colour; and theſe Colours are diſpoſed in a radiated manner. It is leſs purgative than Rhubarb, requiring a double Quantity to produce the ſame Effect. It is alſo a little aſtringent. *Geoffrey.*

It is common enough in the Gardens of Botaniſts, and flowers in *May*. There is ſcarce any Difference between this and true Rhubarb, only this is more acrimonious, leſs ſolid, and more of a Saffron Colour. Rhapontic is leſs purgative, and more aſtringent than Rhubarb. It is vulnerary and anodyne, and is of Uſe in Diarrhœas, Dyſenteries, Convulſions, Ruptures, the Orthopnœa, periodical Fevers, and venemous Bites. The Doſe in Powder is two Drams, in Infuſion ſix Drams.

It is much controverted among Botaniſts, as Mr. *Ray* obſerves, whether the *Raphontic* of the Ancients, and the Rhubarb of the Moderns, are one and the ſame Plant; ſome affirming, others denying it; and ſome among the reſt are inconſiſtent with themſelves, ſometimes making them to be the ſame, at other times different. The various Opinions and Reaſons for them may be found in *J. Bauhine's* Appendix to his *Hiſtory of Plants*; we ſhall only obſerve with *Proſper Alpinus*, that our *Rhapontic* is the true *Rhapontic* of *Dioſcorides*, but quite different from the Rhubarb of the Shops. *Dale.*

RHASPE. ῥασπη. A Species of Wine mentioned by *Nicolaus Myrepſus*, Sect. 1. C. 500. It is not known what Sort he means.

RHASTONE. ῥαστώνη, from ῥᾴδιος, ῥᾴων, eaſy, in *Hippocrates*, 3 *Epid.* ſignifies a Remiſſion or Alleviation of a Pain or Diſeaſe. The Word in *Plutarch, de Precept. Sal.* means a Sort of Indolence, or middle State between Pleaſure and Pain. It occurs alſo in *Hippocr. de Artic.* where it imports an eaſy and gentle Method of Curing, in oppoſition to a violent Way of Management, and is there recommended to Practice.

RHASUT ET RUMIGI *Maurorum* Rauwolff. Lugd. Append. *Ariſtolochia orientalis Foliis lanceolatis*, Pit. Tournef.

A Species of exotic *Ariſtolochia*, growing principally among the Moors and about *Aleppo*; its Root may be uſed in Medicine inſtead of thoſe of the other Species of *Ariſtolochia*. It contains Plenty of Oil and Salt, and is vulnerary, deterſive, drying and reſolvent, being outwardly apply'd. *Lemery des Drogues.*

RHECHIA, ῥηχία, *Jon.* for ῥαχία. See RACHIA.

RHEGMA, ῥῆγμα, of ῥήγνυμι, to break, a Rupture, is a Species of Solution of Continuity in a ſofter Part, made by a violent Blow, or Fall, without Section or Punction, and proceeding from an immoderate Diſtenſion. *Galen, de M. M. Lib.* 3. *et Lib. de Conſtit. Art. Med.* And the ſame Author, *Com. ad* 6 *Aph.* 22. ſays that a *Rhegma*, or Rupture, happens when the carnous Part of a Muſcle is broken or torn aſunder. Ῥήγμαλα, in a peculiar Senſe, is a Name, as *Hippocrates* ſays, *Lib.* 1. *de Morb.* given by ſome to thoſe ſlight Spaſms

which

which affect the fleshy Parts without a Suppuration. In *Epid.* near the Beginning, those little ulcerated Fissures which affect the Lips and Gums, are called ῥήγματα τῶν ἑλκίων, "Ruptures "of Ulcers," where *Rhegmata* signifies no more than *Rhagades*, or Fistures; and *Lib.* 3. *de Morb.* Abscesses breaking internally are called ῥήγματα, *Rhegmata.*

RHEGMATIAS, ῥηγματίας ἢ ῥηγματίης from the preceding Word, *Lib.* 1. *et* 2. *de Morb.* is one who labours under the inward Rupture of an Abscess. *Rhegmatiæ*, ῥηγματίαι, *Lib. de Aere, Aqu. et Loc.* are Persons affected with a Rupture of some internal Vessels.

RHEGMOCHASMOS, ῥηγμοχασμὸς, from ῥῆγμα, a Rupture, and χάσμα, a gaping Orifice; a Rupture with a subsequent Hiatus, is one of the three Causes of an Hœmoptoe, assigned by *Celsus*, *Lib.* 4. *Cap.* 4. the other two being ANASTIMOSIS and DIABROSIS. See these Words.

RHEMBE, ῥίμβη, from ῥίμβω, *to wander*, is the same as *Plane*, πλάνη, an Error or Aberration, *Galen in Exeges.* where he seems to have an Eye to that Passage, 7 *Epid.* ᾧ καλὰ φωνὴν ἦν ἐν τῇ ῥιμβίῃ, "He stumbled in his Speech," (mistook, and spoke one Thing for another.) Here *Galen*, for ῥιμβίῃ, reads ῥίμβῃ. Hence ῥιμβώδεις πυρετοὶ in *Artæus de Caus. et Sign. acut. Morb. Lib.* 2. *Cap.* 2. are erratic, or rather desultory, Fevers in Opposition to συνεχεῖς, *continual Ones.*

RHENANUM VINUM. Rhenish Wine. See VINUM.

RHENCHOS, ῥίγχος, from ῥίγχω, *to snore.* Snoring. This Affection is otherwise called *Stertor*, which is a Sound like that of the *Cerchnon*, but greater and more manifest. Many confound those Affections, and make them to differ only in Place and Magnitude, calling by the Name of *Stertor* that Sound or Noise which is heard or supposed to be made in the Passage between the Palate and the Nostrils, as in those who sleep; that boiling or bubbling Noise which in Respiration proceeds from the Larynx, or Head, or Orifice, of the Aspera Arteria, they call *Cerchon*; but if the Sound comes from the Aspera Arteria itself, they will have it called *Cerchnos*, that is, as some understand it, a rattling, or as others, a stridulous, or wheezing Roughness of the Aspera Arteria. In dying Persons this Affection is called by the *Greeks* ῥίγχος, *Rhenchos*, which is a Snoring or rattling kind of Noise, proceeding, as it were, from a Conflict between the Breath and the Humours in the Aspera Arteria.

This and such like Affections are owing to a Weakness of Nature, as when the Lungs are full of Pus, or Humors, to which purpose we read in the *Prognostics* of *Hippocrates*: "It "is a bad Sign when there is no Expectoration, and no Dis-"charge from the Lungs; but a Noise, as from an Ebul-"lition, is heard in the Aspera Arteria, from a Plenitude of "Humor." Expectoration is suppressed either by the Viscidity of the Humor, which requires to be discharged, and which adhering to the Asperia Arteria, and being there agitated by the Breath, excites that bubbling Noise, or Stertor; or by an Obstruction of the Bronchia; or, lastly, by a Compression of the Aspera Arteria, and Throat; whence the Passage is straitened, in which the Humours being agitated, excite such a kind of Noise as before described. Hence *Galen* calls those who are strait-breasted *stertorous.* That Author assigns but two Causes of this Symptom, which are either the Straitness of the Passage of Respiration, or the Redundance of Humours, or both together; but is is necessary to add a third, which is the Weakness of the Faculty, which is the Cause of the *Rhenchos* in dying Persons, where Nature is too weak to make Discharges.

From what has been said, we conclude that this Symptom, or this Sort of Fervor, or Ebullition in the Throat, is not always mortal; but only when Nature is oppressed with the Redundance of Humor in such a manner, that the Lungs cannot discharge themselves by spitting; or the Passage appointed for the Breath, being the Aspera Arteria, is very much obstructed, upon which account many dying Persons labour under a Stertor with their Mouths gaping. An Instance of this you have in *Alemon.* 7 *Epid.* 47. of whom it is said, "That he had a Wheezing in his Throat, or Aspera Arte-"ria, with a Stertor;" and in the Wife of *Theodorus*, 27. where we read, "That she was affected with a stridu-"lous kind of Hoarseness of the Breast and Aspera Arteria, "with a bubbling kind of Noise, and Fluctuation of Pus." Again, *Text.* 9. it is said of the Wife of *Polycrates*, that "she "was affected with a Wheezing about the internal Parts of "the Aspera Arteria and Fauces, and a *Cerchnon*, that is, as "*Valesius* renders the Word, *Asperitas rancida*," a harsh kind of Rattling or Snoring. And *Hermoptolemus*, *Text.* 16. afflicted with a Peripneumony, on the seventh Day spit a pale kind of Matter, and fell into a Stertor. The Woman, also, *Text.* 20. who laboured under a Quinsey, dy'd at last in Convulsions with a Stertor. And, to name no more, the Son of *Amphiphrades*, who lay sick of a Pleurisy, was much molested with a Wheezing or *Cerchnon* about the Fauces. In all

these Instances this Symptom must be ascribed partly to the Weakness of Nature, and partly to the Redundance and Viscidity of the Pus or Humor. It is indeed always a bad Sign, and much to be dreaded; but is highly pernicious in the Progress of a Distemper, when the Strength is very much exhausted, as it plainly indicates that Nature is no longer capable of making Excretions, and is on the Point of Suffocation; and this Symptom, in such a Case, is necessarily attended with some other mortal Sign. But in the Beginning of a Disease there frequently happens a kind of Ebullition, or Fervor, in the Throat, from the Redundance of Humour, or its Viscidity, which disposes it to adhere to the Aspera Arteria; but when this Humour comes afterwards to be concocted, and discharged by Spitting, the *Cerchnos*, or Ebullition ceases. And such a favourable Event may be predicted from the Appearance of other good Signs, at the same time, without the Attendance of any bad Sign, as it happen'd in the Case of *Pisistratus*, 7 *Epid. Text.* 56. "who had a Stertor "in the Fauces, but supported himself under the Distemper "very well, and had the Use of his Reason. His Fever re-"mitted, he had the Benefit of due Excretion, the Stertor "ceased, and he recover'd his Health." *Prosper Alpinus de Præsag. Vit. et Mort. Ægrot.*

RHEON. A Name given by Authors both to the true Rhubarb and Rhapontic.

RHETINE, ῥητίνη. Resin.

RHEUM. The same as RHEON.

RHEUMA. ῥεῦμα. A Flux, or Fluxion, from ῥέω, *to flow.*

RHEUMATISMUS. A Rheumatism.

The Ancients called all kinds of Pains affecting the external Parts, or the Joints, by the common Name of Arthritis, whilst the Word *Rheumatismus* was not so much as known among them. Thus *Aretæus*, in *Lib.* 2. *Chron. Cap.* 12. *de Arthritide*, uses the following Words. "This Disorder in some "Patients wanders over the whole Body, and is at last convey'd "to the Muscles of the Back and Thorax. 'Tis hardly cre-"dible how far this Misfortune spreads and diffuses itself; "the Vertebræ of the Back and Neck become painful, as also "the Top of the Os Sacrum; and soon after this Pain is "communicated to the Kidneys and Bladder." But in the last Century some celebrated *French* Physicians, such as *Carolus Piso*, *Riverius*, *Ballonius* and *Chesneau*, have called the Pains afflicting the intermediate Spaces between the Joints, and Muscles of the Neck, or of either Arm, or of the anterior or posterior Part of the Thorax, the Shoulders, Scapulæ, Thighs, the Hands, by the Name *Rheumatism.* Whilst they called those Pains Arthritic, which afflicted only the Joints and Articulations; tho' these Pains received different Denominations according to the different Parts they affected; thus when they appeared in the Feet, they were called *Podagra*; in the Hands, *Chiragra*; in the Elbows, *Onagra*; in the Teeth, *Dentagra*; in the Vertebræ of the Back, *Lumbago*; and in the Articulations of the Os Ischium, *Dolor Ischiadicus*, or the Sciatic Pain: And even at this Day, 'tis customary to call a Beginning and easily-remov'd *Arthritis*, *Chiragra* or *Podagra*, by the Name of *Rheumatism.*

But as rheumatic and arthritic Pains differ very considerably with respect to the Parts affected, the Causes, Symptoms, and Method of Cure; so the more sagacious Physicians have considered them as distinct and separate: Nor is the Difference between a beginning and inveterate Arthritis of small Importance in the Practice of Medicine.

In a Rheumatism the Muscles, with their common Membrane, and their Tendons, where they are inserted in the Bones, are in various Limbs, and other Parts of the Body, affected with violent Pains and Spasms; whereas, in an Arthritis, the tendinous and nervous Ligaments, by which the Bones are articulated, in consequence of their Cohesion with the Periosteum, are violently afflicted. But as in a beginning Arthritis and Podagra the Pain is rather lodg'd in the Surface of the Ligaments, so in an inveterate Disorder of this Kind the peccant Humor, which is the Cause of the Pain, is seated deeper, and rather possesses the Space between the Cavities of the Articulations. A true Arthritis and a Rheumatism, also, differ in this, that the former frequently recurs, miserably torments the Patient, continues long, and is not to be cured without Difficulty; whereas a Rheumatism sometimes attacks the Patient but once or twice in his Life, does not continue so long, is more easily removed, and capable of a more expeditious Cure. The Pain in these two Disorders is, also, frequently of a different Kind; for in a Rheumatism it is accompanied with Tension, Oppression, a Sense of Weight and Coldness, without any conspicuous Tumor or Redness; whereas, in an Arthritis, the Pain is more lancinating, distending, pungent, and, as it were, threatning a Rupture, with a considerable Tumor and Redness.

As the Cause of every uneasy Sensation is either a Redundance or peccant Quality of the Juices, stagnating and con-

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gested in the minute Vessels of the Coats and Membranes, by which they are violently distended, vellicated and corroded, so 'tis not to be doubted but these Causes concur to the Production of rheumatic and arthritic Pains.

'Tis certain, from Experience, that not only Persons who are young, of sanguineo-serous Constitutions, and of spongious Habits, by the Admission of Cold, or a northerly Wind impetuously rushing in upon any Part; but also that plethoric Patients, Women, and Men otherwise of a robust Habit, by neglecting Venesection or Scarification, especially after an obstructed Perspiration, feel rheumatic Pains in the Neck, Scapulæ, Shoulders, Back, Sternum and Thorax, or are even afflicted with gentle Degrees of an Arthritis. Whereas those who are naturally of lax and less fibrous Habits, who are decended from arthritic and gouty Parents, or whose Strength and the Tone of whose Parts are highly weakened by the immoderate Use of Venery, Wine, Luxury, or violent Fatigue and Commotions of Mind, are afflicted with a true, a deeper and more obstinate Arthritis, especially in the Feet.

Those labouring under a violent Arthritis, especially of the inveterate kind, when this ceases, are easily afflicted with an Inflammation of the Kidneys from the Stone; and when this ceases, they relapse alternately into an Arthritis. Besides, 'tis certain, from daily Experience, that arthritic Patients, especially those afflicted with the Gout in the Feet, generally labour under some Fault of the Digestion, and have their Primæ Viæ turgid with Eructations, Flatulences, Spasms, and a Load of peccant Humours; whilst, at the same time, their Bodies are not sufficiently soluble. Besides, we observe, that many Persons afflicted with the Gout, are also subject to the hemorrhoidal Discharge, tho' without any Relief, violent Pains seizing the Os Sacrum, and the Veins of the Anus sometimes becoming tumid.

As the Nature and Condition of the Humours, which generate and support rheumatic and arthritic Pains, are not always the same, so these Disorders often differ widely with respect to their Degrees, Genius and Symptoms; for where there is only a Redundance of Blood, as yet not much contaminated by impure Particles, the Pains are generally mild and slight, which happens in a simple Rheumatism, and the beginning Arthritis of plethoric Patients. But the Pains are far more violent, when they are sustained and supported by a Collection of impure and excrementitious Serum; for I have often observed, that as in all Pains, so also in those which violently afflict the external and nervous Parts, it rarely happens that a Redundance of temperate and pure Blood alone produces the Effect, since it is generally mixed with an excrementitious Serum; for 'tis either too thin, serous, and impregnated with a small Quantity of red Globules, or contaminated by a viscid, glutinous and tenacious Serum. The excrementitious and impure Salts in the Mass of Blood also differs much with respect to their volatile, fixed, saline and tartarous Acrimony, and consequently produce different Symptoms. So that, according as the Nature and Genius of these Causes differ, the Rheumatism may properly be distinguished, by Physicians, into the sanguineous, cacochymic, scorbutic, fix'd, and wandering.

Hence it happens, that in different kinds of Pains, Blood taken from the Veins differs both with respect to Colour and Consistence: For sometimes, when it is received in warm Water, it is observed to abound with a large Quantity of viscid Mucus, consisting of Fibres variously interwoven. Sometimes the Serum, which floats above it, is immediately form'd into a Concretion resembling Glew or Leather, just as it happens in those afflicted with a violent Peripneumony. At other Times the Serum is very thin, and the Blood of a florid red Colour, which frequently happens in a Rheumatism and wandering Gout, and is a certain Sign, that a Salt of a somewhat alcaline and volatile Nature is mix'd with it. *Carolus Piso*, in *Libr. de Morb. ex Colluv. Serof. oriund. Sect.* 5. *Cap.* 3. in Pains of the external Parts, tells us, That he has observ'd the Blood so full of serous Sordes, that when it was set by in a Bason, hardly a twentieth Part which had the Colour and Consistence of Blood subsided to the Bottom, whilst the remaining Part, which floated above, was entirely aqueous, but cover'd with a viscid white Pellicle. *Ballonius*, in *Libr. de Rheumatismo*, tells us, that he frequently found the Blood, which he had taken in a large Quantity from the Arm, impure and resolv'd into a putrid Serum. And I myself have often observ'd, that tho' in the Beginning of these Pains the Blood was of a laudable Consistence, yet in Process of Time, or when the Disorders were deeply rooted, it was highly serous, corrupted, and covered with a tough Pellicle. For a Redundance of Blood is the first Cause and Origin of these Pains; but in the Course of the Disease, it is, by the hot intestine Motion, and the continual Agitation, converted into a peccant Serum; for which Reason *Carolus Piso* classes all the Species of the Arthritis and Rheumatism among the Diseases arising from a serous Sordes; which seems to be confirmed by the thin and copious, as also the slimy and turbid Urine, together with the profuse and fetid Sweats which generally accompany these Disorders.

It is a Question of no small Importance in the Theory of Medicine, how and in what manner, since the Blood is in a perpetual Motion through the Vessels, the peccant Serum is separated from it, becomes stagnant, and is deposited in the external nervous Parts. And tho' the Theory of the Ancients was entirely destitute of the Succours of natural Philosophy and Anatomy, in investigating the Causes and Generation of Disorders, yet *Hippocrates*, in *Lib. de Flatib.* has, as it were, from the Principles of natural Philosophy and Mechanics, made a beautiful Attempt to explain the Causes of these painful Defluxions, and the Method of their Generation; for he tells us, that Blood naturally hot, when forcibly convey'd through a narrow Passage, cannot, in consequence of Obstacles and Obstructions, pass quickly through it: So that the thinnest Part of the Blood is not received into the Veins, but being accumulated, flows through other Vessels, and when it stagnates, produces Fluxions and Pains in particular Parts.

But that we may have a more adequate Idea of the Generation of these Disorders, we must first consider the occasional and accidental Causes, and then the manner in which these Pains generally attack the Patient. Now, 'tis certain, from Experience, that rheumatic Pains of the Limbs are most incident to those Persons, who, after intense Labour, Motion, and Exercise, the Use of the warm Bath, or an intensely hot Atmosphere, suddenly expose themselves to a cold Air, or a northerly Wind. Soon after which they are seiz'd with a certain Horripilation and Weariness, and then with a heavy, oppressive, and contractory kind of Pain in various Parts; such as the Neck, the Scapulæ, the Shoulders, the Back, the Loins, or in that particular Side into which the Cold and northerly Wind has penetrated, and sometimes all over the Body: And the Disorder is the more violent, the more turgid the Body is with Blood. I have, also, frequently observed Persons, after liberal Venesection, Women after copious menstrual Discharges, or Fluxes of Blood, from the Uterus produc'd by Abortion, Patients after violent Fluxes, whether spontaneous or induced by strong and drastic Purgatives, when they have too long exposed their Bodies to a cold northerly Wind, or to a moist and cold Night-Air, afflicted with violent rheumatic Pains; for no other Reason, than that by the Violence of the Cold penetrating the Pores, the small lymphatic Veins and Arteries, which contain and convey the Blood for the Nutrition of the Parts, are compressed, contracted, and clos'd up. Hence it happens, that the Serum being no longer capable of being contain'd in and convey'd thro' its Vessels, overflows like a River, and is deposited sometimes in one Part and sometimes in another, or is placed without the Vessels and the Laws of the Circulation. But since all extravasated Humours, in Process of Time, lose their mild and natural Crasis, assume a foreign Nature, and become partly glutinous and tenacious, and partly acrid and saline; hence it happens, that by the Tension, Compression, Lancination, and violent Stricture of the fibrous and nervous Parts, intense Pains, frequently accompanied with a Sense of chilly Cold, are produc'd. Sometimes it also happens, that the extravasated Serum, like the White of an Egg, degenerates into a thin and corrupted Sordes, which cannot be again coagulated by a strong Heat, and passes from one Part to another; especially from the superior to the inferior Parts, through the fleshy and porous Substance of the Parts. For nothing more frequently recurs in Practice, than to observe a Rheumatism changing its Place, and falling from the Head to the Neck, the Scapulæ, the Shoulders, and Breast, especially in young Persons, whereas in Adults it falls down to the Back, the Parts about the Coccendix, and the Thighs.

'Tis also certain, from Experience, that about the Spring; and in the Month of *October*, when there are remarkable Changes of Weather, from hot to cold, and from cold to hot, or when contrary Winds suddenly succeed each other, arthritic and rheumatic Disorders most frequently attack Persons who abound with an impure Blood and Serum, prey upon the Body, and afflict it with a kind of febrile Commotion. These Disorders are preceded by a spontaneous Lassitude, and Heaviness of the Limbs, accompanied with a Refrigeration of the Extremities, a Horripilation, and a certain Sense of Cold. This State is succeeded by an uneasy internal Heat, especially about the Præcordia, a quick and contracted Pulse, Restlessness, Thirst, Loss of Appetite, Costiveness, and sometimes a Difficulty of Breathing. Afterwards a violent and acute, or an oppressive Pain, accompanied with Tension, seizes sometimes one and sometimes another Part, and is increased in the Night-time, just as it usually happens in catarrhal Fevers. And tho' this febrile Commotion is in some mild, and in others violent, and

is eaſily remov'd, yet a Pain remains in the Part affected, and often continues for a long time to rack them. But ſince every febrile Commotion is of ſuch a Nature, as ſpaſmodically to affect the external and nervous Parts, and by contracting and compreſſing the minute Roots and Extremities of the Veſſels, accumulates the Blood and Humours in the large interior Veſſels, and produces a quicker Syſtole in the Heart and Arteries, it can hardly happen otherwiſe, but that the Blood being convey'd with a great Impetus into the lateral Ramifications of the ſmall Arteries, which do not contain red Blood, ſhould at laſt depoſite its ſerous Portion without the Veſſels; and this is the Origin of the Pain. But 'tis to be obſerv'd, that theſe painful ſpaſmodic Strictures of the ſenſible Parts are not produced by a thin Serum entering into them, ſince this Species of Serum is in a great meaſure diſſipated; but rather by its more viſcid Parts, and its ſaline pointed Spiculæ intimately inſinuating themſelves into their Pores. Hence theſe Diſorders do not quickly and eaſily yield to Medicines, becauſe the peccant Matter is deeply impacted in the Parts.

From what has been ſaid it is ſufficiently obvious, that an Obſtruction of the Circulation of the Blood, and of its Regreſs through the minute Veſſels, conſtitutes the immediate and evident Cauſe of theſe rheumatic Pains; which may be more clearly demonſtrated from this, that, as I have often obſerv'd, when a tight Bandage, after Veneſection in the Feet for ſome ſevere Wound, is left applied for twenty-four Hours, an uneaſy Pain, like that of the Gout, and which laſts for many Days, ſeizes the Articulations of the Foot, and eſpecially of the great Toe. An Accident of this Nature lately happened to a celebrated Phyſician, who for certain Reaſons had a Vein opened in the Calf of his Leg, but was obliged to uſe a tight Ligature, becauſe the Vein lay low. Next Morning a violent Pain and Tumour had ſeized not only the Calf of his Leg, but alſo the Articulations of his Foot; ſo that there was a Neceſſity for a careful Diſcuſſion of the Tumor, by internal and external Medicines, leſt it ſhould degenerate into a greater Misfortune. From what has been ſaid, we, alſo, ſee that there is a great Affinity betwixt a Rheumatiſm and an Arthritis, ſince the former ſometimes ſo effectually counterfeits the latter, as by ſome to be called an univerſal and wandering Arthritis, which ſometimes ſuddenly ſeizes ſeveral Articulations, violently afflicts the Vertebræ of the Spine, and the Joints of the Bones. Nor is it ſtrange to obſerve, in Practice, that fix'd and wandering Rheumatiſms, in thoſe who are frequently ſubject to them, eſpecially if they have beſides contracted a Weakneſs, are at laſt transform'd into a true Arthritis. And ſince an Hemicrania, a Pleuriſy, a ſpurious Hepatitis, and a Tooth-ache, are Species of Rheumatiſms, 'tis not to be doubted, but they are generated by the ſame Cauſes, and in the ſame manner.

'Tis certain, from Experience, that the Rheumatiſm ſpares neither that Age nor Sex, which *Hippocrates*, in *Sect.* 6. *Aph.* 29, & 30. in ſome Circumſtances, pronounces free from the Arthritis. But 'tis in a particular manner obſervable, that thoſe who in their Youth have been ſubject to frequent Hemorrhages of the Noſe, which have afterwards ceaſed, are ſubject to Rheumatic Pains; which is alſo obſerv'd by *Hippocrates*, in *Prorrhet. Lib.* 2. where he informs us, that thoſe who have Pains and Tumors about the Joints, have large Viſcera provided in their Childhood and Youth, the Blood has ceaſed to flow from their Noſtrils; for which reaſon he orders us carefully to enquire, with reſpect to the Eruption of the Blood, whether it happen'd in the Patient's Youth, as alſo whether there are pruriginous Prickings, as it were, with a Nettle, either in the Breaſt or Back, ſince theſe are ſufficient Proofs of the Impurity of the Serum. But what *Hippocrates* affirms, with reſpect to Hemorrhages of the Noſe, may, in my Opinion, be aſſerted concerning all other ſalutary Excretions of the Blood: For nothing more frequently occurs in practice, than that Women, eſpecially of a ſanguineous Complexion, after the fiftieth Year of their Age, when their Menſes totally ceaſe, are afflicted with wandering Pains here and there, unleſs ſuch a Misfortune is prevented by ſeaſonable Veneſections. 'Tis alſo ſufficiently known to Practitioners, that an uſual Diſcharge from the hæmorrhoidal Veins, proceeding duly and at proper Seaſons, may render Perſons free both from arthritic and rheumatic Pains; to which they become ſubject, when that Diſcharge ceaſes or is ſuppreſs'd: Tho', at the ſame time, I have known Inſtances of weak and cachectic Patients, in whom neither the arthritic nor nephretic Pains ceaſed, even under a due hæmorrhoidal Diſcharge.

As for the Generation of theſe Diſorders, 'tis to be obſerv'd, that Perſons who have ſtrong Exerciſe, live ſparingly, and drink Water, are free from them; whereas thoſe who indulge themſelves in Idleneſs, drink Wines and ſpirituous Liquors, live luxuriouſly, and are addicted to immoderate Venery, eſpecially when young, are frequently afflicted with violent arthritic and rheumatic Pains.

'Tis alſo to be obſerv'd, that a remarkable Diſpoſition to theſe Diſorders is produced by other previous and long-protracted Diſeaſes, particularly intermittent Fevers, eſpecially when ill-manag'd. Thus *Ballonius*, in *Lib. de Rheumatiſmo*, informs us, that he has obſerv'd many, towards the End of chronical quartan Fevers, afflicted with violent Pains of all the Joints. I have, alſo, known long-continued Colics, and Pains of the Abdomen, ſucceeded by wandering ſevere Pains of the Joints recurring at ſtated Periods.

There is alſo a ſcorbutic Rheumatiſm, in which the whole Maſs of Lymph and Serum is contaminated with impure, excrementitious, ſalino-ſulphureous and acrid Particles, which now and then diſcover themſelves by Efflorescences, Spots, and a Purple Fever; and this Species of Rheumatiſm draws its Origin from an improper, heavy, and ſaline Diet; an idle and ſedentary Life; a continual Living in a foggy and vapid Air; and long-protracted Sorrow: For which Reaſon it is very frequently incident to the Inhabitants of Maritime Countries.

But a venereal Rheumatiſm is of a more terrible kind, and in the Night-time, eſpecially, afflicts certain nervous Parts in thoſe who by impure Coition, have contaminated their whole Maſs of Lymph and Blood, with a virulent and putrid Miaſma. But all the Cauſes hitherto enumerated, ſeem to have a Tendency to increaſe the Serum, render it impure and intemperate, and impair the Strength of the ſolid Parts, by diminiſhing the ſalutary Excretions; by which means Stagnations and Defluxions of the Serum, together with intenſe Pains, are produced.

Hence the reaſon is obvious, why rheumatic and arthritic Pains are happily terminated by copious Diſcharges of Urine, ſpontaneous Sweats, and natural Hemorrhages; and why the Patients receive great Relief from various Efflorescences of the Skin. Thus *Hippocrates*, in *Aph.* 74. *Sect.* 4. tells us, "That where there is a Probability of an Abſceſs about "the Joints, the Patient is reliev'd by diſcharging a large "Quantity of thick white Urine, like that which in ſome "Patients begins to be diſcharg'd on the fourth Day in Fe-"vers accompanied with Wearineſs. But if an Hemorrhage "of the Noſe happens, the Diſorder is ſoon terminated." By Fevers accompanied with Wearineſs, we may juſtly underſtand thoſe of the rheumatic Kind, which ſeize with a Senſe of Pain and Wearineſs all over the Body. I have, alſo, frequently obſerv'd, that arthritic Pains have ceaſed upon the ſpontaneous Appearance of Ulcers in the Legs; and again ſeized the Patient when theſe were artificially conſolidated. I have alſo known violent arthritic Pains totally removed by the Appearance of a Pſora, or an Itch, reſembling a white Leproſy; for as a Tranſlation of the peccant Matter from the internal to the external Parts is highly ſalutary, ſo, on the contrary, a Tranſlation of it from the external to the internal Parts and Viſcera, is highly prejudicial.

So long as rheumatic Pains and beginning Gouts remain in the external Parts, and the peccant Humour is not prepoſterouſly drawn inwards to thoſe of a more noble Kind, they are free from Danger, and do not readily prove fatal to the Patient: For as in the firſt Years of Life, and in Youth, theſe troubleſome catarrhous Defluxions in the Head, and thoſe of a rheumatic Kind in the muſcular Parts, accompanied with frequent Hemorrhages of the Noſe, denote a remarkable Weakneſs of Nature, or a diminiſh'd Tone and Strength of the Solids; ſo, in Youth and Manhood, they prognoſticate various chronical Diſorders, which in their Cauſes and Genius have a near Affinity with theſe, eſpecially when the Patients are deſcended from morbid and hypocondriac Parents.

THE CURE.

From what has been ſaid, 'tis ſufficiently obvious, that the whole Intention and Method of Cure conſiſts in duly conſidering the particular Habit of the Patient, and the different Cauſes of the Diſorder; whether it is recent, and proceeds from a Redundance of Blood; or, from a Collection of impure Serum, and is of long-ſtanding and deep-rooted; then in forming proper curative Intentions from theſe Circumſtances; and, laſt of all, in preſcribing Medicines proper for anſwering theſe Intentions.

When, therefore, the Patient is evidently plethoric, and an univerſal Rheumatiſm, accompanied with a febrile Commotion, has ſeized all his Limbs, and is therefore, as the Ancients called it, of the ſanguineous Kind; the moſt effectual and expeditious Means of Relief conſiſts in Veneſection, uſed in the Beginning of the Diſorder, as is juſtly obſerv'd by the moſt ſkilful Phyſicians. Thus *Alexander Trallian*, in *Lib.* 11. ſpeaks in the following manner: "When you ſuſpect that "the Humour collected about the Joints is of the ſanguineous "Kind, you are, if nothing contra-indicates, to uſe Vene-"ſection:

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" ſection: For by this means I have known many either to-
" tally cured, or rarely afflicted with Defluxions; becauſe,
" in the very Beginning of the Diſorder, they had Blood
" taken from them, both for the Purpoſes of Evacuation and
" Preſervation." This Doctrine is confirm'd by my own Experience, for I have known many plethoric Patients, who, by external Cauſes, having Perſpiration totally obſtructed, have been ſeized with intenſe Pains of the whole Body, accompanied with a Stupor and Immobility of the Parts; but were totally recovered by ſeaſonable Veneſection in the Beginning, which may, if Neceſſity requires, be ſafely and boldly repeated about the fourth Day. I have, alſo, known Perſons of a middle Age, and of ſanguineo-choleric or melancholic Conſtitutions, ſeized with a mild Gout in the Hands or Feet; but have had theſe Misfortunes prevented, or entirely removed, by Veneſection about the Equinoxes, or ſometimes about the Summer Solſtice.

And as the ſanguineous Rheumatiſm is in no Country more frequent than in *France*, on account of the ſanguineous Complexion of the Inhabitants, and the Tendency of their Aliments to generate a large Quantity of Blood; ſo 'tis not ſurpriſing, that the *French* Phyſicians, who firſt wrote well on a Rheumatiſm, ſhould greatly recommend Veneſection for its Cure. Thus *Ballonius*, in *Lib. de Rheumatiſmo*, ſpeaks thus: " I recommend Phlebotomy in a Rheumatiſm, and affirm it " to be a ſalutary Remedy." *Carolus Piſo* alſo affirms, that repeated Veneſection is of great Importance, both in preventing and curing a Rheumatiſm, and furniſhes us with many memorable Inſtances of it. *Riverius*, in *Cent.* 3. *Obſ.* 42. and *Cent.* 4. *Obſ.* 42. mentions an obſtinate Rheumatiſm, removed in two young Men, by Veneſection ſeven times repeated. *Leon. Botallus*, the firſt Author of Veneſection in *France*, in *Lib. de Curat. per Sang. Miſſion. Cap.* 12. evinces, by many Reaſons and Inſtances, how uſeful repeated Veneſection is in rheumatic Pains, and how ſpeedy a Relief is afforded by it. *Sydenham* alſo affirms, that the Cure of this Diſorder is to be expected from nothing but Phlebotomy, which is to be repeated in a few Days. In *M. N. C. Dec.* 4. *An.* 9. *Obſ.* 120. there is a memorable Inſtance of an univerſal Rheumatiſm cured both happily and expeditiouſly by repeated Veneſection alone. But Veneſection is ſtill more neceſſary both for the Prevention and Cure of a Rheumatiſm in Women, whoſe Menſes are either defective or totally ſuppreſſed; and in Men who have an uſual hemorrhoidal Diſcharge ſuppreſſed.

Supported both by Reaſon and Experience, I aſſert, that beſides Veneſection, in a hot Arthritis and Rheumatiſm, when beginning and accompanied with a febrile Heat, a preſent and ſpeedy Relief is afforded by mild Diaphoretics, moderately mixed with nitrous Subſtances, and exhibited in ſmall but reiterated Doſes, perſiſted in for a conſiderable Time; ſince by their Means the intenſe Heat, Fervour and Orgaſm of the Blood, is not only allayed, but alſo the peccant Humour gently, ſucceſſively, and equally diſcuſſed. The moſt proper Sudorifics for this purpoſe, are the Powder of Crabbs Eyes, foſſile Unicorn, burnt or unburnt Hartſhorn, diaphoretic Antimony, or its Ceruſs, Amber, prepared Shells, and Cinnabar, with the Addition of a ſufficient Quantity of purified, or rather artificial Nitre, which are to be exhibited in pectoral and gently anodyne Waters; ſuch as thoſe prepared of the Flowers of Elder, the Egyptian Thorn, Meadow-ſweet, and the Lime-Tree; of black Cherries, Carduus Benedictus, Ladies Thiſtle, and Scabious. Nor is it improper, in order the better to check the febrile and erratic Heats, to add to theſe a due Quantity of Citron-Juice; or to render the Medicine more grateful, of the Syrup of Citron-Juice. For common Drink, we recommend Whey, acidulated with Cream of Tartar, or impregnated with Tamarinds; or Water boiled with the Shavings of Hartſhorn, the Roots of Vipers-Graſs, Succory, Liquorice and Graſs, together with the Seeds of Fennel.

But when Rheumatic Pains ariſe not ſo much from a Redundance of pure and well-conditioned Blood, as from a Plenitude of Blood of the impure and ſerous kind, eſpecially in weak Perſons of ſerous and phlegmatic Conſtitutions, than Veneſection, eſpecially in the Cure, is not to be uſed without the greateſt Caution. Hence *Galen*, in *Lib.* 6. *Aphor.* 47. juſtly obſerves, " That Patients afflicted with a Plethora, are " to be relieved by Veneſection; but that to ſuch as abound " with corrupted Juices, we are to exhibit Purgatives." And by theſe Evacuations, he affirms, that he not only cured many who for a long time before had been every Year afflicted with Diſeaſes, but alſo removed and warded off a beginning Gout and Arthritis for many Years. But thoſe who have been often harraſſed with Defluxions of this kind, receive more Injury than Benefit from Veneſection, eſpecially if they are old or of weak Conſtitutions.

Hence 'tis obvious that the Ancients were of opinion, that the Differences of Pains, eſpecially of the arthritic kind, with reſpect to their Cauſes, were to be carefully obſerved in the Cure; for there is one Method of curing a Rheumatiſm, or a beginning Arthritis, tho' univerſal, in a plethoric Habit, which is produced by a Redundance of Blood, in conſequence of an obſtructed Perſpiration: But the Method of Cure is quite different, where an intenſe Pain is obſtinately fixed in one Part, accompanied with a violent Senſe of Cold, and excited by Cold imprudently admitted to that Part in ſerous Bodies. But ſtill different Meaſures are to be taken, when a plethoric Patient, under a long Courſe of the Diſeaſe, or by means of a prepoſterous and unſkilful Cure, degenerates into a cachectic or cacochymic State; and little laudable Blood of a due Conſiſtence, but a great deal of ſerous and excrementitious Sordes, is contained in the Veſſels; for in Caſes of this kind, thoſe Remedies are principally indicated as proper, which gently, tho' effectually, eliminate the peccant Serum through proper Emunctories, that is, by Stool, Urine and Perſpiration.

With reſpect to the Uſe of Evacuants, Violence is in this Caſe by no means to be uſed; but the bilious, viſcid, and ſerous Sordes, are to be gently and gradually eliminated by mild and temperative Laxatives. This Intention I have from Experience found excellently anſwered by Infuſions prepared of Water, mixed with half the Quantity of Wine, and gently boiled with the Roots of Succory, Burnet, and Polypody, Rhubarb, Senna Leaves without the Stalks, Carduus Benedictus, the Tops of the leſſer Centaury, Agarick, Orange and Citron Peel, the Bark of Saſſafraſs Wood, Raiſins, and *Tartarus Tartariſatus*. It is alſo beneficial to chew about two Scruples or a Dram of Rhubarb, with fat Raiſins or Currans; for I can from Experience affirm, that Rhubarb taken in Subſtance evacuates twice as much as if it was exhibited in Decoctions or Infuſions; and at the ſame time it remarkably corroborates the Tone of the Inteſtines and Viſcera. But it is expedient to exhibit ſuch an evacuating Medicine thrice, or at leaſt twice a Week, that the Sordes left in the Primæ Viæ by a bad Digeſtion may be eliminated; ſince otherwiſe they greatly contribute to cheriſh the Diſorder, and augment its Force. And I have learned from repeated Experience, that alterative and evacuating Medicines of this kind are of ſingular Service in ſuch Pains as recur periodically and at ſtated Hours.

When the *Primæ Viæ* are thus cleanſed, 'tis not only expedient but neceſſary to eliminate the peccant Serum, by ſuch Decoctions as gently promote Tranſpiration and Sweat; ſuch as thoſe prepared of China-Roots, the Roots of Sarſaparilla, Succory, Liquorice, and Vipers-Graſs; the Wood and Bark of Saſſafraſs, the Wood of yellow Sanders and Guajacum, together with Figs and Currans. When the Diſorder is deep-ſeated and inveterate, I have often found from Experience, that great Relief is afforded by crude Antimony, mixed with double the Quantity of the bezoardic and diaphoretic Powder, above deſcribed, and exhibited at proper Seaſons, and in due Doſes. Inſtantaneous Relief is alſo afforded by a celebrated diuretic and diaphoretic Liquor, which reſtores the Tone of the Parts, and is prepared of the Tincture of Tartar, the acrid Tincture of Antimony, the anodyne mineral Liquor mixed in due Proportions, and exhibited in proper Doſes.

When a Rheumatiſm either of a fixed or wandering kind, ſeizes a ſcorbutic Habit, and diſcovers itſelf by evident Signs and Symptoms, the Cure is pretty long before it is perfected; for it is neither an expeditious nor an eaſy Task to reſtore the whole Maſs of Lymph and Serum, when become intemperate, corrupted and impregnated with ſaline and excrementitious Parts, to its native Sweetneſs and Conſiſtence. In this Caſe, the moſt efficacious Medicines are thoſe of a diluting and demulcent kind, pretty copiouſly uſed and perſiſted in. The moſt conſiderable of this ſort are ſweet Whey, either impregnated with Manna, acidulated with Tamarinds, or mixed with the Juices of antiſcorbutic Herbs; as alſo the temperate mineral Waters, ſuch as thoſe of *Selteran*, *Wildungen*, and *Tonnſteinen*; or in robuſt Conſtitutions, thoſe of *Pyrmont* and *Egra*, mixed with half the Quantity of Aſſes or Cows Milk, and uſed with a proper Regimen, almoſt anſwer all the Intentions of Cure.

If a Rheumatiſm draws its Origin, as it frequently does, from the Remains of a Lues Venerea contained in the Maſs of Blood, more powerful and draſtic Medicines become neceſſary; for unleſs ſudorific Decoctions of the Woods, heightned by an Addition of crude Antimony, or even of *Mercurius Dulcis*, are prudently uſed, the Cure is rarely brought about.

As for Topics for the gentle and ſucceſſive Diſcuſſion of the Humour lodged in any particular Part, great Caution is neceſſary in the Choice and Exhibition of them, leſt they ſhould do more harm than good. If the Rheumatiſm is of the ſanguineous kind, it is moſt proper totally to abſtain from them, and only to cheriſh the Parts affected with a moderate Heat of the Bed and other Coverings. Since by this means the peccant Matter is more mildly and happily exhaled, than it can be by the Aſſiſtance of various Topics. But if a thick, immovable, and cold Humour is deeply and obſtinately ſeated in any

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Part, and accompanied with a Senſe of Cold, and a Conſtriction of the Pores, then Frictions with rough-warm Cloaths powerfully remove the tenacious Humour from its fixed Seat; and after theſe Frictions, Cupping-Glaſſes, either with or without Scarification, are to be applied; but 'tis to be obſerved, that Cupping-Glaſſes, with Scarification, applied to ſuch painful Parts, even tho' the Inciſions are pretty deep, procure an Evacuation of but very little Blood: A ſatisfactory Proof that the Ramifications of the Blood-Veſſels are ſo contracted and compreſſed by the ſpaſmodic Stricture, as to obſtruct the Circulation of the Blood: So that 'tis highly probable that theſe Pains are not ſo much excited by a Redundance of Blood congeſted in theſe Parts, as by a viſcid and acrid Humour ſtagnating in them.

When therefore the Humour is deep-ſeated, and produces violent Pains of the Limbs, we can hardly be entirely without external Remedies. But tho' for this purpoſe various Medicines are by different Authors highly extolled, yet I have found none more effectual than my nervous Liniment, which is prepared in the following Manner:

Take of *Anhalt* Water two Ounces, of *Peruvian* Balſam two Drams, and of old Theriaca one Dram; Infuſe and extract by Digeſtion: To the ſtrain'd Liquor add of the Eſſences of Saffron, Caſtor and Nutmegs, each two Drams, and of Camphire one Dram; make into a Liniment, with which the pained Limbs are to be often anointed.

But if after a long protracted Pain, a Rigidity and Immobility, accompanied with a Stupor, remain, which Diſorder is called a Pareſis, the following Liniment uſed in the ſame manner, I have often found to produce admirable Effects.

Take of human Fat two Ounces, and of *Peruvian* Balſam and Oil of Cloves, each two Drams, mix up into a Liniment according to Art.

Baths alſo, whether natural or artificial, are of ſingular Uſe in the Cure of theſe Diſorders, when cautiouſly uſed: But they ought never to be uſed in the Beginning or in the Height of the Diſeaſe, but rather in its Decline, both to draw the Remains of the Diſorder from their remote Seats, by moderate Sweats, and to ſoften the rigid Members, and corroborate ſuch as are weakened by the painful ſpaſmodic Strictures and Agitations. But I can from Experience aſſert, that I have found better Effects produced by none, than by a Bath prepared of the Waters of *Lauchſtad* in *Meiſſen*, which contain a delicate Crocus Mortis, and are of a highly ſubtile and light Nature.

Tho' in Pains of the external Parts ariſing from a Redundance of thick Blood, and a Suppreſſion of the ſalutary Excretions, copious Veneſection, eſpecially in the Beginning, is a powerful and divine Remedy; yet when a long-protracted Pain has ſo deſtroyed Digeſtion, a laudable Chylification and Strength, that the Body rather abounds with Serum than with Blood, or is already weaken'd by Age, Veneſection is not to be uſed without the greateſt Caution. Neither is Phlebotomy to be uſed when under the Paroxyſm, accompanied with a febrile Commotion; Nature attempts Tranſlations of the peccant Matter to the external Parts; at which time, juſt as in an Erylipelas, it is by no means expedient to diſturb and counteract the ſalutary Work of Nature for the Patient's Relief.

I have often obſerved, that Veneſection properly inſtituted before the Æquinoxes, excellently preſerves Perſons of conſtricted Habits, as alſo thoſe of ſanguineo-melancholic and ſanguineo-choleric Conſtitutions, not only from catarrhous Defluxions, but alſo from rheumatic and arthritic Pains, to which they were before frequently ſubject; ſo that there is not a more powerful Remedy for preventing theſe Diſorders, than Veneſection, eſpecially if the Patient uſes due Exerciſe, and abſtains from ſpirituous Liquors and a rich Fleſh-Diet.

Tho' a Milk Diet is of ſingular Service in wandering arthritic Pains, and where the Diſorder is produced by a ſubtile and bilious Acrimony, yet 'tis expedient to abſtain from it, when the Veſſels are too full, either of a ſtagnant or too ſerous Blood, and the Tone of the Stomach and Inteſtines is deſtroyed, leſt by its Means Infarctions of the Viſcera ſhould be produced, and the Way pav'd for a ſucceeding Cachexy.

When a Suppreſſion of the hemorrhoidal Diſcharge is the Cauſe of rheumatic or arthritic Pains, this Evacuation is with all Expedition to be recalled, tho' for this Purpoſe we are by no Means to uſe Veneſection in the ſuperior Parts, but in the Feet. Then we are to exhibit thoſe Medicines which gently promote this Diſcharge, ſuch as the *Pilulæ Avicennæ*, the *Pilulæ Berberianæ*, and others of a like Nature, interpoſing, at proper Intervals, the temperate and nitrous Powders, which allay the internal Heat, that greatly contributes to the Suppreſſion of the Hæmorrhoids. If theſe Meaſures ſhould not prove effectual, but Gripes and Vomitings ſhould accompany the external Pains, we are without Heſitation to apply Leeches to the Veins of the Anus, a Remedy which ſometimes proves ſurprizingly efficacious.

Thoſe who are ſubject to catarrhous, rheumatic, or arthritic Diſorders, as alſo thoſe who are diſpoſed to ſpaſmodic Commotions, or Congeſtions of the Blood and Humours, ought carefully to abſtain from all ſtrong, hot, diuretic and diaphoretic Medicines, from acrid Purgatives, from all ſpirituous balſamic Subſtances, which throw the Blood into a preternatural Orgaſm, from rich ſpirituous Liquors, after which the Urine is red and deeply tinged; and from all Malt Liquors, except of the medicinal Kind, ſuch as that which does not oppreſs the Head, is freely diſcharged by Urine, and aſſiſts Digeſtion: But they ought for common Drink to uſe either pure Spring Water, temperate mineral Waters, or ſome grateful Decoction, which creates no loathing. And theſe Meaſures are ſtill more carefully to be obſerved by thoſe whoſe Juices are contaminated by ſcorbutic Purples, a very common Diſorder in our Age.

When a violent and obſtinate Pain for a long Time afflicts the inferior Parts of the Body, ſuch as the Os Iſchium, and the Os Coccygis, and the Patient is of a robuſt and vigorous Habit of Body, more powerful chymical Medicines, ſuch as *Mercurius Dulcis*, Solar Precipitate well prepared, and medicinal Regulus of Antimony, which may alſo be added to ſudorific Decoctions, are of ſingular Efficacy in removing the thick, tough, tartarious and vellicating Humour, from its deepeſt and moſt remote Seats.

When the Pains are ſo violent, which happens in delicate Conſtitutions, as to deprive the Patient of his Appetite and Sleep; and when neither Veneſection, the nitrous and temperate Powders, nor any anodyne Liquor prove effectual to allay them, it is expedient gradually to paſs from gentle Anodynes, ſuch as the Emulſion and Syrup of white Poppy Seeds, to thoſe of a more powerful Nature, ſuch as the *Pilulæ Wildeganſii*, the *Pilulæ Storckii*, the *Pilulæ de Stryace*, or even a Grain or two of Laudanum Opiatum, with an Addition of a ſmall Quantity of the Extract of Saffron. But in other Caſes, Opiates are not to be raſhly uſed, ſince it has been often obſerved, that they render theſe Diſorders ſo obſtinate, as hardly to yield to the moſt efficacious Remedies; but create a great deal of Trouble both to the Patient and Phyſician.

In a beginning Rheumatiſm of the Scapulæ, nothing is more efficacious than the Application of a Veſicatory between them; but if this Misfortune ſhould happen in plethoric Habits, as I have often obſerved in Women about fifty Years of Age, when their Menſes ceaſe, great Relief is afforded by applying Cupping-glaſſes with Scarification, to the inferior Parts every Month.

As Perſons naturally diſpoſed to anomalous Motions of the Solids and Fluids, and to Tranſlations or Congeſtions of the latter, are of a tender Habit, of a delicate Turn of Mind, and eaſily injured by the exorbitant Workings of Paſſions, which lay a Foundation for the Generation of theſe Diſorders; ſo Tranquillity of Mind, ſufficient Exerciſe, and an Abſtinence from every Thing which has a Tendency to ruffle and diſcompoſe the Mind, are of great Uſe in the Cure of theſe Diſorders. *Frederic Hoffman.*

The Rheumatiſm, a very frequent Diſorder, bears a very near Affinity to the Arthritis, the Gout, and the Scurvy.

The preceding Cauſes of this Diſorder are, a ſanguineous Habit, accompanied with an acrimony of the Juices, a mature Age, luxurious Living, a ſudden Admiſſion of the Cold to the Body, when over-heated, the Influence of the Weather in the Autumn, an Obſtruction of Perſpiration, and a tough inflammatory State of the Fluids, to be diſcovered by a pleuretic Blood. It begins with a continual Fever, and creates a violent dilacerating Pain, which is greatly increaſed upon the ſmalleſt Motion, is long fixed in one Place, ſeizes the Joints of any of the Limbs, and is particularly incident to the Knees, the Loins, and the Coxendix. It alſo ſometimes affects the Brain, Lungs, and Viſcera, is accompanied with a Tumour and Redneſs of the Part, and comes and goes periodically.

If it remains for a conſiderable Time, and is increaſed, it often, after the moſt violent Pains, deprives the Limb of Motion, and produces an Anchyloſis, which will hardly yield to any Medicine.

The immediate Cauſe of a Rheumatiſm ſeems to be ſo mild an Inflammation as not to degenerate into a Suppuration, in the lymphatic Arteries of the Membranes contiguous to the Ligaments of the Joints. It is cured by Veneſection; repeated antiphlogiſtic Purgatives, every Evening after which a proper Narcotic is to be exhibited; by mild tepid Baths, and antiphlogiſtic Fomentations applied to the Parts affected; by draſtic Veſicatories and Cauteries; by highly diluting and emolli-

ent Medicines; by attenuating Food; by Reſt and the Warmth of the Bed; and towards the End of the Cure by Frictions with warm dry Cloths, together with the Uſe of Antiſcorbutic Medicines.

A Lumbago or Rheumatiſm ſeizing the Loins, and ſciatic Pains, are cured in the ſame Manner, tho' with ſomewhat greater Difficulty.

Hence appear the Reaſons why this Diſorder is ſo frequent, and its Appearances ſo various; why 'tis highly dangerous, when it ſeizes the Brain or Lungs; why in theſe Parts it is not diſcovered without the greateſt Difficulty; and why the Uſe of hot Subſtances, or the too ſpeedy Exhibition of Narcotics, muſt be dangerous in it. *Boerhaave Aphor.*

This Diſeaſe happens at any Time, but eſpecially in Autumn, and principally affects ſuch as are in the Vigour of Life. 'Tis generally occaſioned by expoſing the Body to the cold Air, immediately after having heated it by violent Exerciſe, or ſome other Way. It begins with a Chilneſs and Shivering, which are ſoon ſucceeded by Heat, Reſtleſſneſs, Thirſt, and the other Concomitants of a Fever. In a Day *or two, and ſometimes ſooner, there ariſes an* acute Pain in ſome one or other of the Limbs, eſpecially in the Wriſts, Shoulders and Knees, which, ſhifting between whiles, affects theſe Parts alternately, leaving a Redneſs and Swelling in the Part laſt affected. In the Beginning of the Illneſs the Fever, and the abovemention'd Symptoms, ſometimes come together; but the Fever goes off gradually, whilſt the Pain continues, and ſometimes increaſes, occaſion'd by the Derivation of the febrile Matter to the Limbs; which the frequent Return of the Fever, from the Repulſion of the morbific Matter by external Remedies, ſufficiently ſhews.

This Diſeaſe, when unattended with a Fever, is frequently taken for the Gout, though it differs eſſentially therefrom, as will eaſily appear to thoſe who are thoroughly acquainted with both Diſeaſes; and hence it is, perhaps, that phyſical Authors have not mentioned it; unleſs we ſhould eſteem it a new Diſeaſe. But however this be, it is at preſent very frequent, and though, when the Fever is gone off, it ſeldom proves fatal, yet the Violence of the Pain, and its long Continuance, render it no contemptible Diſeaſe. For in caſe of wrong Management, it frequently remains not only ſeveral Months, but ſome Years, and even during Life; though in this Caſe it is not equally painful, but has its periodical Returns, like the Gout; and the Pain may poſſibly go off ſpontaneouſly after it has been of very long ſtanding. But in the mean time, the Patient is depriv'd of the Motion of his Limbs during Life, the Joints of the Fingers being contracted inwards, with ſtony Concretions as in the Gout, which rather appear in the internal Parts of the Fingers than the external, while the Appetite may be very good, and the general Health not amiſs.

There is another Species of this Diſeaſe, though it is not generally eſteemed of this kind, which may properly be called a rheumatic Lumbago. It is a violent fix'd Pain of the Loins, reaching ſometimes to the Os Sacrum, and reſembling a nephritic Paroxyſm; only the Patient does not Vomit. For, beſides the intolerable Pain near the Kidneys, the whole Conduit of the Ureters, even to the Bladder, is ſometimes affected with the ſame, though in a leſs Degree. I have been formerly led into an Error hereby, as imagining it to ariſe from ſome Gravel lodged in theſe Parts; whereas, in reality, it proceeds from the peccant and inflamed Matter of the Rheumatiſm, which affects only thoſe Parts, leaving the reſt of the Body free. Unleſs this acute Pain be removed in the ſame Manner as the former Species, it continues as long, and proves equally violent; ſo that the Patient cannot lie in Bed, but is forced either to leave it, or ſit upright therein, and be perpetually moving his Body backwards and forwards.

Since both the Kinds of this Diſeaſe ſeem to ariſe from Inflammation, as appears from their Concomitants juſt mentioned, and eſpecially by the Colour of the Blood taken away, which exactly reſembles that of Perſons in a Pleuriſy, which is univerſally allowed to be an inflammatory Diſeaſe; ſo I judge that the Cure ought to be attempted only by Bleeding, the Heat of the Blood being in the mean time abated by cooling and incraſſating Medicines, along with a proper Regimen.

Accordingly, as ſoon as I am called, I direct ten Ounces of Blood to be immediately taken away from the Arm of the Side affected, and preſcribe a cooling and incraſſating Julap, nearly after the following Manner.

Take of the diſtilled Waters of Lettice, Purſlain, and Water Lilly, each four Ounces; Syrup of Lemons, an Ounce and Half; Syrup of Violets, an Ounce; mix them together for a Julap, of which let the Patient drink at Pleaſure; or of the following Emulſion.

Take ſeven blanched ſweet Almonds; of the Seeds of Melons and Pumpions, each Half an Ounce; the Seeds of white Poppies, two Drams; beat them together in a Marble Mortar, then pour on, by Degrees, a Pint and Half of Barley-Water; mix them well, and when ſtrained, add two Drams of Roſe-Water, and Half an Ounce of white Sugar.

To eaſe the Pain, I order a Cataplaſm, prepared of the Crumbs of white Bread and Milk, impregnated with Saffron; or a Cabbage-Leaf to be applied to the Part affected, and frequently renewed. With reſpect to Diet, I enjoin a total Abſtinence from Fleſh, and even the thinneſt Fleſh-Broths, ſubſtituting in their Place Barley-Broth, Water-Gruel, Panada, and the like. I allow only ſmall Beer for Drink, or which is more proper, a Ptiſan prepared of Pearl-Barley, Liquorice, Sorrel Roots, and the like, boiled in a ſufficient Quantity of Water. I, alſo, adviſe the Patient to ſit up ſome Hours every Day, becauſe the Heat which proceeds from always lying in Bed, promotes and augments the Diſeaſe.

The next Day I repeat the Bleeding in the ſame Quantity; and *in a Day or two after, as the Strength will permit,* I bleed again; then interpoſing three or four Days, as the Strength, Age, Conſtitution of the Patient, and other Circumſtances indicate, I bleed a fourth Time, which is generally the laſt, unleſs too hot a Regimen has preceded, or heating Remedies have been exhibited without Neceſſity. But the Uſe of Opiates requires more frequent Bleeding; and therefore, though the Pain be ever ſo violent, during the whole Courſe of the Diſeaſe, yet when I intend to effect the Cure ſolely by Bleeding, I judge it highly neceſſary to refrain from Opiates, becauſe the Diſeaſe is fixed thereby, and does not yield ſo readily to Bleeding; ſo that where ſuch Medicines are given too frequently, Bleeding muſt in conſequence be oftner repeated than is otherwiſe neceſſary. Beſides, in the Height of the Diſeaſe they do not anſwer the Expectations we have conceived of them.

While the abovementioned Remedies and Regimen are carefully continued, I inject Clyſters made of Milk and Sugar, between times on the intermediate Days of Bleeding; earneſtly recommending the exact Obſervance of theſe Directions, for at leaſt eight Days after the laſt Bleeding; and then I preſcribe a gentle purging Potion to be taken in the Morning, and in the Evening a large Doſe of Syrup of white Poppies in Cowſlip Flower Water; whereby a Check is put to the tumultuary Motion of the Blood, which might otherwiſe endanger a Relapſe. This being done, I allow the Patient to return by Degrees to his cuſtomary way of Living, with reſpect to Diet, Exerciſe, and Air; but at the ſame time caution him to refrain, for a conſiderable time, from Wine, and all ſpirituous Liquors, ſalt or high-ſeaſon'd Fleſh, and in general from all Food of difficult Digeſtion.

After having repeated Bleeding, as above ſpecified, the Pain is greatly abated, though it does not go quite off; but as ſoon as the Strength returns, which Bleeding had greatly impair'd, the Symptoms will vaniſh, and the Patient recover perfectly; eſpecially upon the Approach of the following Seaſon of the Year, which will be more conducive to recruit the Strength, than that wherein he was firſt attacked with the Diſeaſe.

But though this, or a ſimilar Method, ſeaſonably uſed in the Beginning of the Diſeaſe, generally proves ſucceſsful; yet it frequently happens, when the Cure is attempted by a contrary Procedure, that the Patient is ſeverely afflicted during Life with flying Pains, which are ſometimes violent, and at others more gentle; whereby the Unſkilful are eaſily deceived, and they are commonly reckoned Symptoms of the Scurvy.

But it is here to be obſerved, that when the Rheumatiſm hath taken deep Root by a Continuance of ſome Years, it is improper to repeat Bleeding at ſuch ſhort Intervals as in the Beginning of the Diſeaſe; and better to interpoſe ſome Weeks between the Operations. By theſe Means the morbific Matter will either be quite exhauſted, or at leaſt in ſo great a Degree, that the Remains of it may be carried off entirely, by an Iſſue made in one of the Legs, and exhibiting a proper Quantity of ſome volatile Spirit, every Morning and Evening, in Canary.

But though there is a remarkable Difference between the true Rheumatiſm and the Scurvy, it muſt nevertheleſs be own'd, that there is another Species of the Rheumatiſm, which is near a-kin to the Scurvy: For it reſembles it in its capital Symptoms, and requires nearly the ſame Method of Cure; and therefore I call it a ſcorbutic Rheumatiſm. The Pain ſometimes affects one and ſometimes another Part, but it rarely occaſions a Swelling, as in the other Species, neither is it attended with a Fever. It is, alſo, a leſs fixed Pain, and accompanied with irregular Symptoms; ſometimes it affects one Limb, and ſometimes another; ſometimes it only attacks the internal Parts, and cauſes Sickneſs, which goes off again upon

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the Return of the Pain of the external Parts. In this manner the Patient is alternately afflicted, and the Diſeaſe proves of long Duration, like thoſe Diſtempers which are eſteemed moſt chronical. It principally attacks the Female Sex, and Men of weak Conſtitutions; ſo that I ſhould have concluded it ought to be referred to the Tribe of hyſteric Diſorders, had not repeated Experience taught me, that it would not yield at all to hyſteric Remedies.

Such, likewiſe, as have gone through a long Courſe of the Peruvian Bark, are ſubject to this Diſeaſe, which, by the way, is the only ill Effect I have ever obſerved from the Uſe of this Medicine. But however it be, this Diſeaſe, whether it proceeds from this or any other Cauſe, is eaſily conquered by the Uſe of the following Remedies, which I ſhould have conceal'd, had I not preferred the Good of Mankind to any private Intereſt.

Take of the Conſerve of Garden Scurvy-Graſs, 2 Ounces; Conſerve of Wood-Sorrel, an Ounce; compound Powder of *Arum*, ſix Drams; Syrup of Oranges, enough to make the whole into an Electuary; two Drams of which is to be taken three Times a Day, for a Month, drinking after it three Ounces of the following diſtilled Water.

Take of Garden Scurvy-Graſs, eight Handfuls; of Water-Creſſes, Brook-Lime, Sage, and Mint, each four Handfulls; the Peel of ſix Oranges; Nutmegs bruiſed, Half an Ounce; infuſe them in ſix Quarts of Mum, and draw off only three Quarts for Uſe, in a common Still.

A CONSUMPTION FROM A RHEUMATISM.

In a Gout and Rheumatiſm, eſpecially thoſe of the legitimate and humoral Kind, which draw their Origins from an acrid Ferment ſupply'd by the Nerves, there is ſo manifeſt a Colliquation of the whole Maſs of Blood, that we have no Reaſon to wonder if a Phthiſis ſhould ariſe from theſe Diſorders, eſpecially when they are obſtinate, chronical, or ſubject to recur frequently. Hence we may obſerve, that Rheumatic Pains, ariſing from a contracted Cold, ſeldom or never invade the Joints, without being accompany'd with a pulmonary Cough. And as I obſerv'd that the illuſtrious Mr. *Orlando Bridgman*, Mr. *Philips*, Mr. *Tibs*, and a great many others, have at laſt died either of a Phthiſis or Aſthma, after long-continued arthritic and rheumatic Paroxyſms; ſo I have, alſo, ſometimes remark'd, that an acute and fatal Phthiſis ſucceeded the very firſt Paroxyſm of the Rheumatiſm.

It ſometimes happens that a Phthiſis ſucceeding the firſt Acceſs of the Rheumatiſm is of the acute Kind, ſince it draws its Origin from the Colliquation of Humours in the acute Paroxyſm of the humoral Rheumatiſm. As it, therefore, partakes of the Nature of a common Phthiſis, its Cure ought to be attempted in the ſame manner; that is, by lubricating and incraſſating Subſtances, Opiates and other pulmonary Medicines. And even in Caſes where there is neither a troubleſome Cough, nor a Difficulty of Breathing, I uſe, and that with great Succeſs, in all Paroxyſms of the Rheumatiſm, to preſcribe large Quantities of *Apozems* and *Eclegmas*, of a pectoral, lubricating and incraſſating Nature, not only with a View to give a proper *Craſis* and Softneſs to the Blood; but, alſo, in order to guard againſt a *Phthiſis*, which frequently acknowledges a Rheumatiſm for its Cauſe.

When a Phthiſis ariſes either from a Gout, or an inveterate and often recurring Rheumatiſm, it is plainly of the chronical Kind, and may happen for a long Tract of Years gradually to injure the Lungs and other Parts, deſtin'd for the ſeveral Purpoſes of Reſpiration. And, indeed, a Phthiſis of this Kind partakes of the Nature of an Aſthma; ſince, by reaſon of the Viſcidity of the Phlegm, it is more frequently accompany'd with a Difficulty of Breathing than an obſtinate Cough, and ſeems rather to ariſe from a *Stupor* of the nervous Syſtem, than a Colliquation of the Humours.

But this aſthmatic Phthiſis has, in my Opinion, ſomething ſingular in its Nature, ſince the Choice of Air has not the leaſt Influence upon it; for I have obſerv'd, that Patients labouring under this Species of Phthiſis, even though they were aſthmatic, breath'd as free and eaſy in an Air that was damp, and impregnated with the Smoke of Coals, as in that which was pure and ſerene. Hence it happens, that lubricating and expectorating Medicines are, at leaſt, of no Service in this Caſe; whilſt, at the ſame time, Opiates and incraſſating Subſtances produce the moſt fatal Effects. Greater Relief is juſtly to be expected from frequent and copious Exhibitions of the Spirit of Harts-horn, Sal-Ammoniac, chymical Oil of Juniper, and ſuch other Medicines as rouze the Spirits and comfort the Nerves, than from any Opiates or pectoral Medicines whatever.

The rheumatic Pains and Swellings are generally leſſened in proportion as this Aſthmatic Phthiſis advances and gains Ground. And indeed a true and legitimate humoral Rheumatiſm degenerates into a nervous one, accompanied with flitting Pains, without any apparent Swelling, long before it proves mortal.

A rheumatic Phthiſis, ariſing from a chronical Rheumatiſm, and invading old People, is, for ought I know, altogether incurable, ſince 'tis a ſure Sign that weakened Nature is now no longer able to maintain the laborious Struggle, and grapple with ſo formidable an Enemy as the Rheumatiſm.

Gentle Vomits, repeated at proper Intervals, eſpecially if they happen to work eaſily, and are not called in too late, contribute very much to the Cure of this Species of Phthiſis, ſince they prove Deobſtruents to the Brain and Nerves, allay the rheumatic Pains, and leſſen the Stupor and Rigidity of the nervous Syſtem in general; by which Means the procatarctic Cauſe, or Fomes of this kind of Phthiſis is in a great Meaſure removed, or at leaſt diminiſhed.

Veneſection, in the Beginning of this Diſorder, before the Strength of the Patient is too much exhauſted, is alſo of ſingular Service, not only by leſſening the hectic Heat, and the rheumatic Pains, but alſo by proving a grateful Relief to the Difficulty of Breathing.

But when the Diſeaſe is conſiderably advanced, and the Patient labours under an univerſal and preternatural Languor, I have often obſerved, that Veneſection not only gives an additional Shock to Nature, already too much weakened, but alſo increaſes the Difficulty of breathing. And indeed I have not the leaſt Reaſon to doubt, but this aſthmatic Phthiſis frequently proceeds from profuſe and often repeated Veneſections, under the Paroxyſms of a Rheumatiſm; ſince by that Means, as well as by other immoderate Hemorrhages, the due *Craſis* of the Blood is deſtroyed, and its whole Maſs impoveriſhed.

I have alſo had many Proofs of the ſingular Efficacy of the Peruvian Bark in extinguiſhing the hectic and colliquating Heat, excited and left in the Maſs of Blood, by the Force and Violence of the Rheumatiſm; and indeed if this Heat is not removed and carried off, either by the Efforts of Nature, or the Aſſiſtance of Art, it paves a direct Way, and lays a ſure Foundation for a pulmonary Phthiſis.

I have alſo obſerved, that for this very Reaſon, chalybeate Medicines, and eſpecially chalybeate mineral Waters, provided they were drunk betimes, and paſs'd off freely and copiouſly by Urine, were of ſingular Uſe in the firſt Stages of this Diſtemper, for procuring a Reſpite, at leaſt, if not for perfecting the Cure.

Hot Baths, and artificial Baths, uſed before the Patient's Strength is too much exhauſted, have generally a lucky Influence upon this Species of Phthiſis in its firſt Stages, by removing the Obſtructions of the Fibres.

In the Beginning of this Diſtemper, a Milk Diet is alſo of ſingular Service, by diminiſhing the Heat, and allaying the preternatural Acrimony of the Blood. But I muſt own it is not ſo proper when the Diſeaſe is advanced, and a Difficulty of breathing already brought on; becauſe, in that caſe, it generally renders the Phlegm impacted in the *Bronchia* more glutinous than it was before. Nor perhaps is it a groundleſs Conjecture, that the too plentiful Uſe of Milk in Rheumatiſms, very much diſpoſes the Patient to an aſthmatic Phthiſis.

CASE I.

One Mrs. Laurence, about thirty five Years of Age, happening, when big with Child, to be ſeized with an univerſal Rheumatiſm, was ſo unfortunate as to commit the Care of her Health to a certain Apothecary for ſome Months, till at laſt conſidering her Complication of Symptoms, her Cough, her Difficulty of breathing, her hectic Fever, her Languor, and other Symptoms of a like Nature, it became uncertain whether ſhe was to fall a miſerable Sacrifice to a Rheumatiſm or a Phthiſis, ſince her Rheumatiſm, which was formerly of the legitimate Kind, had by this Time degenerated into a nervous one, accompanied with a certain Rigidity and flitting Pain of the Joints, but without any Tumour or Swelling. When the Patient was in this deplorable State, I was called on the 25th of *October* 1686; and in order to allay the rheumatic and hectic Heat of the Blood and Spirits, together with the hyſteric Indiſpoſition ariſing from them, I preſcribed her the following Electuary and Julep.

Take of the old Conſerve of red Roſes and of Hipps, ſtrained through a Sieve, of each an Ounce, Lavender Flowers powder'd, Magiſtery of Coral; of each a Dram, of Syrup of Corals a ſufficient Quantity, mix them, and make an Electuary, of which let her take the Quantity of a Nutmeg every ſix Hours.

Take

Take the Waters of Rue, and black Cherries, of each four Ounces; of Barley-Cinnamon Water three Ounces, the compound Waters of Piony, and of Briony, of each an Ounce and half; of prepared Pearl a Dram and half; of fine Sugar a ſufficient Quantity to ſweeten them; mix them, and make a Julap, of which let her take four or five Spoonfuls after every Doſe of the Electuary, and likewiſe at other Times when ſhe has a Mind to it.

To help the Pains and Stiffneſs of her Joints, I ordered that ſame Night bliſtering Plaiſters to be applied to the Inſide of her Arms, near the Arm-Pits; and I tried a gentle Evacuation by Stool, with two Ounces of Tinctura Sacra, which ſhe bore well. I ordered the following Paregoric Draught to be taken when ſhe was to go to Reſt.

Take of red Poppy Water three Ounces, Barley-Cinnamon Water an Ounce, of compound Piony Water two Drams, Salt of Wormwood ſix Grains, Syrup of Meconium ſix Drams, mix them, and make a Draught.

October 28. I gave her the following Vomit.

Take of the Infuſion of *Crocus Metallorum* an Ounce, Syrup of Violets two Drams; mix them, and let them be given for a Vomit about five o'Clock in the Afternoon, with due Care and Management; and (if it be neceſſary) let her take between her Vomiting a Scruple of Salt of Vitriol, twice or thrice in a Draught of warm Poſſet Ale.

I ordered alſo the following Paregoric Draught to be taken when the Vomit had done working.

Take of Mint-Water half an Ounce, Dr. Stephen's Water three Drams, Barley-Cinnamon Water, Alexiterial Milk Water, of each an Ounce, of Diacodium ſix Drams; mix them, and make a Draught.

From the Vomit ſhe found an univerſal Relief, and that not only from the Symptoms of her Conſumption, but alſo of her Rheumatiſm. And therefore, after three Days, I ordered the Repetition of the Vomit; and then I endeavoured to extinguiſh the hectic Flame, which had been kindled in the Blood by the Rheumatiſm, and thereby to take Care of her Lungs, which had been injured by it, in the Manner following.

Take a ſufficient Quantity of the Ingredients of the pectoral Decoction, of the Peruvian Bark an Ounce, Balſam of Tolu a Dram; boil them in a ſufficient Quantity of ſpring Water, to a Pint and half; to the Liquor, when it is ſtrained, add diſtilled Treacle Water, the Balſamic Syrup, of each an Ounce and half; mix them, and make an Apozem, of which let her take four Ounces three Times a Day for ſix Days together, taking always in the Night-Draught fifteen Drops of Helmont's liquid Laudanum, if any Gripes, or Looſeneſs, or want of Reſt ſhould trouble her.

When ſhe had done uſing the Apozem, I ordered the emetic Potion to be repeated, and afterwards, *Novemb.* 13. I preſcribed the following Pills.

Take of the *Peruvian* Bark, finely powdered, an Ounce, Mucilage of Gum Tragacanth, a ſufficient Quantity. Mix them, and make them into Pills of a middle Size, to be gilt; of which let her take ſix Morning and Evening, every Day.

With the Uſe of theſe ſhe grew perfectly well, being evidently freed not only from the Pains and Stiffneſs of her Limbs, but likewiſe from her Cough, Difficulty of Breathing, Oppreſſion, Fever, and all the other Symptoms of a pulmonary Conſumption. Her Appetite alſo returned, and at length ſhe likewiſe recovered her Strength, and her Fleſh, and ſtill enjoys very good Health, without any Return of her Rheumatiſm or Conſumption. *Morton.*

RHEXIS, ῥῆξις, from ῥήγνυμι, to break, a Rupture, in *Hippocrates*, 5 *Aph.* 15. ſignifies the breaking of an Abſceſs; and alſo 6 *Epid. Sect.* 6. *Aph.* 24. In other Places it is applied to a Rupture of ſome Blood-Veſſel, whence an Hæmorrhage is occaſioned.

RHICNOSIS, ῥικνωσις, from ῥικνὸς, rugous or wrinkled, is a Corrugation of the Skin, attended with an Extenuation of the Body, and oppoſed to *Ectaſis*, ἔκτασις, a Diſtention of the Skin from Repletion.

RHIGOS, ῥῖγος, *Lat. Rigor*, a Rigor, is defined by *Galen*, *Lib. de Trem. & Palp. &c.* a Perfrigeration, with an Uneaſineſs, and irregular Agitation and Concuſſion of the whole Body. This is the Definition of a morboſe *Rigor*, ῥῖγος νοσῶδες, ος αὐτόματον, as he calls it, *Com.* 3. *in* 1 *Epid.* or ῥῖγος νοσῶδες, as it is called by *Hippocrates*, *Lib.* 4. *de Morb.* when the Diſorder ariſes, or has its Original in the internal Parts, and proceeds from no external violent Cauſe, but invades and comes upon the Body, as it were ſpontaneouſly; for *Rigor* in a more univerſal Senſe, or as it ſignifies any uneaſy Perfrigeration, may be incident to Perſons in Health. That a *Rigor* is not a Senſe of Perfrigeration, with a Trembling, is largely proved by *Galen* in the Book above cited, where he gives the diſtinguiſhing Characters of a *Rigor*, and a *Tremor*, or Trembling; and at laſt concludes, that a *Rigor* is a ſtrong and urgent Senſe of a Refrigeration of the natural Heat. *Hippocrates*, alſo, *Lib.* 1. *de Morb.* ſays, that a *Rigor* proceeds from a Refrigeration of the whole Body, occaſioned by a Refrigeration of the Blood; and *Lib.* 4. he makes a *Rigor* to take its Riſe from a violent Irruption of acrimonious Humours into ſome Part, and a vehement Conflict of the jarring Humours, attended with a Concuſſion of the whole Body; and ſuch a *Rigor* as this was always accounted by the Ancients an Attendant upon a Fever, as appears from *Hippocrates*, *Lib.* 1. & 4. *de Morbis*; for a ῥῖγος ἀπυρέτιος, or a *Rigor* not ſucceeded by an intemperate or feveriſh Heat, was, as *Galen* ſays, *Lib.* 5. *de Sympt. Cauſ.* unknown to the ancient Phyſicians, on account of their extremely frugal Way of Living, being no more than a Senſation of a kind of Horror, and having very little of the true *Rigor* in it. This owes its Original to a vitreous Phlegm, and cold and crude Juices, Intemperance in Diet, a lazy and idle Life, and to the frequent Uſe of Bathing; and is very familiar to the Female Sex, as *Galen* in many Places aſſures us. *Hippocrates*, *Lib.* 1. *de Morb.* makes a *Horror* to be a weak kind of *Rigor*; and *Celſus*, *Lib.* 8. *Cap.* 2. uſes the Word *Horror* for *Rigor*, from 4 *Aph.* 58. where he ſays, "That a burning "Feve, which the *Greeks* call Καυσώδης, *Cauſodes*, meets with a "Solution from the ſudden Coming of a *Horror*." The *Latins* alſo call thoſe Shiverings and Shakings, which affect the Patient under the Fits of Fevers, indifferently by the Name of *Horrores* or *Rigores*.

Rigor is alſo taken in another and quite different Senſe, for an inflexible Hardneſs and Tenſion of the Nerves and Muſcles, which ſeems more properly expreſſed by *Rigiditas*.

RHINARION, ῥινάριον, the Name of a ſmectic or deterſive Collyrium, deſcribed by *Paulus*, *Lib.* 7. *Cap.* 16.

RHINE. The ſame as SQUATINA, which ſee.

RHINEMA, RHINISMA, ῥίνημα, ἢ ῥίνισμα, Scrapings, Shavings, Filings, and the like. *Hippocrates*, *Lib.* 1. περὶ γυναικ. and *Galen*, *Lib.* 3. κατὰ τόπ.

RHINENCHYSIS, ῥινέγχυσις, from ῥὶς the Noſe, and ἐγχύω, to infuſe; an Infuſion into the Noſtrils, which is performed by an Inſtrument called

RHINENCHYTES, ῥινεγχύτης, a Syringe for the Noſtrils, mentioned by *Cælius Aurelianus*, *de Morb. Chron. Lib.* 2. *Cap.* 4. and *Lib.* 3. *Cap.* 2. where the vulgar Reading is *Rinenchytos*; but *Rhodius*, *ad Scrib. Larg.* reads *Rhinenchytes*.

RHINION, ῥινίον, the Name of a Collyrium in *Galen de C. M. S. L. Lib.* 4. *Cap.* 7. and of another deſcribed by *Celſus*, *Lib.* 6. *Cap.* 6. for a dry Opthalmy, and ſcabrous Eyes. *Caſtellus.*

RHINOCEROS, Offic. Schrod. 5. 305. Raii Synop. A. 122. Mont. Exot. 5. Aldrov. de Quad. Biſul. 878. Charlt. Exer. 12. Geſn. de Quad. 842. Jonſ. de Quad. 66. *Abada ſive Rhinoceros*, Bont. THE RHINOCEROS.

The Part in Uſe is the black, fiſſile, pyramidal Horn, a Cubit in Length, of the Figure of a Buffalo's Horn, and perfectly ſolid, or without Cavity.

This Horn is commended againſt contagious Poiſons, and other Diſtempers which require Sudorifics, and therefore in ſuch Caſes may ſupply the Want of the Unicorn's Horn. *Schroder. Monti* writes that the Horn is alexipharmic, cardiac, ſtomachic, diaphoretic, and a Sweetner.

Though there are various Kinds of Quadrupeds with one Horn, deſcribed by Authors, I take them all, ſays *Dale*, to be fictitious, except the *Rhinoceros*, which is the only Unicorn, or one-horn'd Quadruped, and perhaps the very ſame with that of the Ancients, whoſe Horn *Ælian* affirms to be black. And *Schroder*, as well as others, aſcribe the Virtues ſaid to be in the Horn of the Unicorn, to the Horn of the *Rhinoceros*.

RHINOPTES, ῥινόπτης, from ῥὶς, or ῥῖνες, the Noſtrils, and ὄπτομαι, to ſee, is a Perſon who from a Diſeaſe in the great *Canthus* of the Eye, which has laid open the Paſſages to the Noſe, is enabled to ſee through the Noſtrils; an Inſtance of which we have in *Rungius de Viſus Sympt.*

RHINOS, ῥινὸς, in *Erotian*, is expounded by δέρμα, the Skin.

RHIPIDION, ῥιπίδιον. A Fan. *Moſchion.*

RHIPTASMOS, ῥιπτασμὸς, from ῥίπτω, to toſs or caſt. A Toſſing and Reſtleſſneſs, a Symptom very frequent in Fevers. See ALYSMOS.

RHIZA, ῥίζα. A Root.

RHIZAGRA. The Name of a Chirurgical Inſtrument, for extracting the Roots or Stumps of Teeth.

RHIZIAS, ῥιζίας. A Liquor collected from Roots by Inciſions made therein. *Silphium* is particularly thus called.

RHIZOPHORA. The Name of a Vegetable, of which *Boerhaave* mentions two Species; the firſt of which is the *Rhizophora; Indica; Bryoniæ nigræ ſimilis*; ad foliorum ortum verrucoſa. *Plukn. Phyſ. T.* 220. *F.* 50.

The ſecond is the

Rhizophora; Americana.

RHIZOTOMUS, ῥιζοτόμος. The ſame as RADICISECA.

RHOA, ῥοὰ. The Pomegranate.

RHODAPSINTHATON, ῥοδαψίνθατον. A Preparation of Roſes. *Ætius* deſcribes ſeveral of theſe, Tetrabib. 4. Serm. 4. C. 117.

RHODELÆUM. Oil of Roſes.

RHODIA RADIX, Offic. Ger. 426. Emac. 532. Raii Hiſt. 1. 690. Park. Theat. 729. C. B. P. 286. J. B. 3. 683. *Telephium luteum minus, radice Roſam redolente*, Hiſt. Oxon. 3. 468. *Anacampſeros radice Roſam ſpirante major*, Tourn. Inſt. 264. Boerh. Ind. A. 269. Raii Synop. 3. 269, ROSEWORT.

It grows on hilly Places, and flowers in the Spring. The Part in Uſe is the tuberous and brittle Root, which is of a dark-brown Colour on the Outſide, and whitiſh within, and of a roſy Smell and Taſte. This Root is heating and drying, and cephalic; its principal Uſe is in Pains of the Head. *Dale.*

RHODIACON, ῥοδιακὸν. The Name of a Plaiſter deſcribed by *Galen* from *Aſclepiades. L.* 2. *de Comp. Medic. p. G. Cap.* 17.

RHODIDES, ῥοδίδες. Troches of Roſes, deſcribed by *Dioſcorides. L.* 1. *C.* 131.

RHODINON, ῥόδινον. Oil of Roſes. Or Vinegar of Roſes.

RHODITES VINUM. Wine impregnated with Roſes; the Manner of preparing it is deſcribed by *Dioſcorides, L.* 5. *C.* 35.

RHODIUM LIGNUM. See ASPHALTHUS.

RHODODAPHNE. The ſame as RHODODENDRON.

RHODODENDRON. The Oleander, or Roſe-Bay. See NERIUM.

RHODOMELI. Honey of Roſes.

RHODOMELON. ῥοδόμηλον. A Confection of Roſes, Quinces and Honey.

RHODON, ῥόδον. A Roſe. Sometimes it imports the Oil of Roſes.

RHODOSACCHARUM. Sugar of Roſes.

RHODOSTACTON, ῥοδόσταγμον. Honey of Roſes. *Paulus Ægineta. L.* 7. *C.* 17.

RHODOSTAGMA, ῥοδόσταγμα, from ῥόδον, a Roſe, and στάζω, to diſtil. Dr. *Freind* remarks, that *Actuarius* is the firſt *Greek* Author who makes mention of diſtilled Liquors, as the *Rhodoſtagma*, and *Intyboſtagma*, which the Tranſlator calls *Stillatitius Liquor Roſarum, & Aqua quam Intybus ſtillavit*; and which are by the Author uſed as Ingredients in a Julap. *Geſner* indeed contends, that theſe Liquors here ſpecified, are not prepared by any chymical Proceſs, and are nothing more than Syrups of thoſe Plants, juſt like the *Rhodoſtacton* deſcribed in *Paulus.* M. *le Clerc*, following the Opinion of *Langius*, thinks otherwiſe; and has ſhewn very plainly, that the ſtillatitious Liquor of Roſes mentioned by *Actuarius*, is very different from the *Rhodoſtacton* of *Paulus*, which is only made with the Juice of Roſes and Honey boiled up together. His Judgment ſeems to be very right in this Matter; and as a further Proof of it, give me leave to obſerve a Paſſage or two in *Nicolaus Myrepſius*, one of the laſt of the *Greeks*, and who often copies from our Author. He deſcribes the *Rhodoſtacton* of *Paulus*, only with this Difference, that he ſays it may be made with Sugar, as well as with Honey: Then he deſcribes the *Hydroroſatum*, as it is delivered down to us by *Ætius* and *Paulus*, a Medicine much like the former, with this Variation alone, that Water is added to the Roſes: And after that, he proceeds to give this very Julap in *Actuarius*, which proves, at leaſt, that he thought it a Preparation very diſtinct from the other two. And it muſt appear very evident to any one who conſiders the Compoſition itſelf, that it is a very abſurd one, unleſs the diſtilled Roſe-Water be meant; for otherwiſe it is juſt a double Trouble, and making the Medicine twice over, with the very ſame Ingredients, to little purpoſe.

RHOF. The ſame as RHUS.

RHOIAS, ῥοιὰς, or ῥοΐας, from ῥέω, to flow, or ῥόος, to draw, is a Flux of the Eyes, occaſioned by a Diminution of the Fleſh in the greater Canthus, or Angle of the Eye. *Galen, Com.* 2. *in* 6 *Epid.* makes four Kinds of it, according to the different Cauſes; for either it is occaſioned, he ſays, by the Cloſure or Obſtruction of the Paſſage at the great Canthus, or by a Collection of ſo much Excrement in the Eye, that this Paſſage, by reaſon of its natural Straitneſs, is incapable of receiving it, and therefore diſcharges it. Or thirdly, it may proceed from the Stopping of the Paſſage by a Cicatrix growing therein, as it happens after a Section of the *Encanthides*. [See ENCANTHIS.] Or laſtly, from any other Ulceration of the Part. The Author of the *Definitiones Medicæ*, defines a *Rhœas* to be a Conſumption of the Fleſh in the Angles of the Eye, occaſioning a Flux of the Tears. And in the *Iſagoge* aſcribed to *Galen*, we read that the Eye is affected with a *Rhœas*, when either the *Canthus*, by ſome unknown Cauſe, is perverted, or by a chirurgical Operation ſo raiſed, as to be incapable of containing the Tears, or preventing their Efflux.

According to *Ætius*, in *Tetr.* 2. *Serm.* 3. *Cap.* 88. the Diſorder by the *Greeks* called *Rhœas*, which is a Diminution or Decreaſe of the Fleſh in the large Angle of the Eye, happens when by an Exulceration, or the Removal of a Pterygium, or the natural Fleſh, the Angle of the Eye is removed, falls down on the Cheek, and becomes uncapable of retaining the Tears. This Diſorder alſo ſometimes happens from an ill-cured *Ægilops.* Thoſe Perſons are, alſo, called *Rhœades*, who in Conſequence of continual Defluxions of the Eyes, perpetually diſcharge Tears. Thoſe, the Angle of whoſe Eye is totally removed, are to be cured by Medicines of a corroborating and conſolidating Quality. But if a Callus is induced, the Parts muſt be ſtimulated by ſome more acrid Medicines. But manual Operation is alſo neceſſary for the Cure of this Diſorder; for a Ligature is to be applied about the Neck, and ſome Blood-Veſſel about the Noſe, are to be marked out and afterwards opened with a two-edged Knife. Then a Sponge being applied to the Eye, a triangular Cautery is to be applied to the Part, tho' not ſo deep as the Bone, but only ſo as to affect the Skin and Wound. Afterwards a Lentil with Honey is to be applied. When the Ulcers are ſufficiently clean, the Eye is to be kept open till the Angle is filled with laudable Fleſh, for fear of a Concretion. In the Cure of this Diſorder, Allum and Turpentine are of ſingular Service.

RHOGME, ῥογμὴ. A Rupture, Fracture, or Fiſſure.

RHOGMOS, ῥογμὸς. A Snoring.

RHOICOS, ῥοϊκὸς. Fluid. An Epithet for Bodies abounding with Humidity.

RHOIDARIUM, ῥοϊδάριον. The Name of a Medicine deſcribed by *Ætius, Tetrabib.* 1. *Serm.* 2. *C.* 68.

RHOITES, ῥοΐτης. A Sort of *Rob* of the Juice of Pomegranates, deſcribed by *Dioſcorides*, L. 5. C. 34. But a Confection made of three Sextaries of the Juice of Pomegranates, and one of Honey, boiled to the Conſumption of one Third, is thus called by *Paulus Ægineta. L.* 7. *C.* 15.

RHOMBOIDES MUSCULUS.

This Muſcle is a thin, broad and obliquely ſquare fleſhy Plan, ſituated between the Baſis of the Scapula and the Spina Dorſi; and it is from its Figure that it has been termed *Rhomboides.*

It may be divided into two Portions, one ſuperior, the other inferior, which ſometimes appear ſeparate. The ſuperior Portion, which ſeems in ſome Subjects to be made up of two, is fixed by an Inſertion wholly fleſhy in the two or three loweſt ſpinal Apophyſes of the Neck, and partly in the poſterior cervical Ligament. The inferior Portion is fixed by a tendinous Plane in the three or four uppermoſt ſpinal Apophyſes of the Back.

Theſe two Portions, of which the inferior is by much the broadeſt, being united, are inſerted in the Edge of the Baſis Scapulæ from the ſmall triangular Space to the inferior Angle, the ſuperior Portion covering a ſmall Part of the Inſertion of the *Angularis.*

This whole Muſcle is covered by the *Trapezius*, and covers immediately the *Serratus Poſticus Superior*, being joined to each of theſe Muſcles by a filamentary or cellulous Subſtance.

According to the Inſertions and Direction of the *Rhomboides*, its general Uſe muſt be to draw backward and upward the ſubſpinal Portion of the Baſis Scapulæ.

It is alſo a Moderator to the *Trapezius* and *Serratus Major*, when they raiſe the Shoulder or carry the *Acromium* upward; and it brings the Scapula back to its natural Situation, when the Action of theſe Muſcles ceaſes.

It may draw the Scapula directly backward, if the inferior Portion of the *Trapezius* acts at the ſame time. For as this Portion draws obliquely downward and toward the Spina Dorſi, and the *Rhomboides* obliquely upward and toward the ſame Spine; the joint Action of both muſt produce a Motion directly backward, as it happens when we pull back both Shoulders equally, in order to diſengage them.

It

It may alſo, together with the radiated Portion of the *Serratus Major*, draw the Baſis of the Scapulæ directly backwards. This, however, is but an inconſiderable Motion, and not ſo eaſy as the reſt; for the *Serratus Major* contributes to it only in proportion to the Action of the *Rhomboides*, which is but very ſmall; and in this Caſe the *Acronium* can riſe but a very little Way. *Winſlow's Anatomy.*

RHOMBOS, ῥόμβος. A Species of Bandage mentioned by *Galen*, thus called from its Figure.

RHOMBUS. A Fiſh called a Turbot.

There are ſeveral Sorts of Turbot, of different Sizes; ſome have Prickles on their Head, and towards the Tail, and others none. They have a delicious Taſte, and are beſt while they are freſh, firm, white, tender and juicy. Some call it *Phaſianus Aquaticus*, the Water-Pheaſant, becauſe its Taſte reſembles that of a Pheaſant. It contains a juſt Proportion of oily and volatile ſaline Principles, and has but few viſcous and groſs Juices. It is, therefore, nouriſhing and eaſy of Digeſtion; is reckoned good againſt the Diſtempers of the Spleen, when applied thereto, and produces no ill Effects, unleſs immoderately uſed. It agrees at all times with any Age and Conſtitution.

There are very large Turbots in the Ocean and Mediterranean. *Rondeletius* ſays, he had ſeen ſome which were five Foot long, four in Breadth, and a Foot thick. This Fiſh ſometimes lives about the fat Soils, and near the Shores, but generally at the Mouths of Rivers, where it watches the ſmall Fiſhes, on which it feeds, eſpecially the Cray-Fiſh. *Lemery on Foods.*

RHOMMA, ῥῶμμα. The ſame as ROPHEMA.

RHONCHOS, ῥόγχος. Snoring or Snorting; from ῥέγχω, to ſnore.

RHOPALOSIS, ῥοπάλωσις. A Diſorder of the Hair, which ſhould ſeem to reſemble the *Plica Polonica*, as it conſiſts in a Matting or Concretion of the Hairs together. *Galen Defin.*

RHOPE, ῥοπὴ, from ῥίπω, to verge, or incline. A violent Tendency of the Humours to any particular Part.

RHOPHEMA, ῥόφημα, from ῥοφέω, to ſup. This Word is frequently uſed by *Hippocrates*. *Cælius Aurelianus* tranſlates it, *Sorbilis Cibus*. It is the Cremor of Ptiſan, that is the Pulp of Barley decorticated and boiled.

RHOX, ῥωξ. The *Tunica Uvea* of the Eye. Or the Pupil of the Eye, in *Moſchion de Morbis Mulierum.*

RHUS.

The Characters are;

The Leaves are pinnated, or triphyllous; the Calyx is quinquefid, ſmall and dentated. The Flowers are roſaceous, pentapetalous, and diſpoſed in Bunches. The Ovary in the Bottom of the Calyx becomes a roundiſh Capſule, pregnant with a ſingle and almoſt globular Seed.

Boerhaave mentions twelve Sorts of *Rhus*, which are;

1. Rhus; folio Ulmi. *C. B. P.* 414. *Tourn. Inſt.* 611. *Boer. Ind. A.* 2. 229. *Rhus Obſoniorum, Sumach.* Offic. *Rhus Coriaria*, Ger. 1291. Emac. 1474. *Rhus, ſive Sumach.* J. B. 1. 555. Raii Hiſt. 2. 1590. *Sumach, ſive Rhus Obſoniorum & Coriarium*, Park. Theat. 1450. COMMON SUMACH.

This Rhus grows not to be a Tree of any great Magnitude, having its Branches cloathed with long pinnated Leaves, whoſe ſingle Pinnæ reſemble the Leaves of the Elm-Tree, but are ſomewhat longer; the Flowers grow in large white Cluſters, which are ſucceeded by ſmall, flat, round, hairy Seed, of a reſtringent earthy Taſte. It grows in *Italy*, *Spain* and *Turkey*. The Leaves and Seed are uſed.

They are both very reſtringent and ſtiptic, good for all Kinds of Fluxes and Hæmorrhages, both uſed inwardly and outwardly. They reſiſt Putrefactions and Gangrenes, and Mortifications. It is an Ingredient in the *Syrupus Myrtinus.*

The *Unguentum Sumach* takes its Name from the Seed. *Miller. Bot. Off.*

It is refrigerating, drying and aſtringent, and is principally uſed in Fluxes of the Belly, Uterus and Menſes. It reſtrains the Hæmorrhoids, and corrects Bile. We think fit to obſerve, that the *Rhus Obſoniorum*, *Coriariorum*, and *Rubeum* (the *Rhus* of the Cooks, of the Tanners, and the red *Rhus*) of *Galen*, are not different Species of Trees; but the *Rhus Obſoniorum* is no other than the Fruit; the *Rhus Coriariorum*, the Leaves and ſmall Branches; and the *Rubeum* the Seed of the ſame Tree. This is the Opinion of that very learned Botaniſt, Mr. *J. Ray*, with whom we agree in our Sentiments on this Head. *Dale.*

2. Rhus Virginianum. *C. B. P. App.* 417. *Raii Hiſt.* 2. 1591. *Tourn. Inſt.* 611. *Boerh. Ind. A.* 2. 229. *Park. Theat.* 1450. *Sumach ſive Rhus*, Ind. Med. 114. VIRGINIAN SUMACH.

It is a Native of *Virginia*, but cultivated with us in the Gardens of the Curious, and is eſteemed to have the ſame Virtues as the common Sumach.

3. Rhus; Americanum, Rachi, cui adnaſcuntur folia, rubrâ; folio lato, utrimque glabro, non ſerrato, Piſtachiæ ſimili.

4. Rhus; Americanum; Rachi, cui folia adnaſcuntur, rubrâ; foliis præcedenti anguſtioribus.

5. Rhus; Americanum; Rachi, cui folia adnaſcuntur, rubrâ, alatâ; foliis molle Cluſii brevioribus.

6. Rhus; Africanum; trifoliatum; majus; folio ſubrotundo, integro, molle & incano. *Plukn. Phyt.* 219. 8.

7. Rhus; Africanum; trifoliatum; majus; foliis obtuſis & inciſis, hirſutiè pubeſcentibus. *Plukn. Phyt.* 219. 7.

8. Rhus; Africanum; trifoliatum; majus; foliis acutioribus, inciſis, ſuprâ viridibus, glabris, infrâ argenteis, glabris. H. R. D.

9. Rhus; Africanum; trifoliatum; majus; foliis acutioribus, arguticis denticulatis, glabris, ſubtus argenteis. H. R. D.

10. Rhus; Africanum; trifoliatum; majus; foliis ſubtus argenteis, acutis, & margine inciſis. *Plukn. Phyt.* 219. 6.

11. Rhus; Africanum; trifoliatum; minus; glabrum; ſplendente folio, ſubrotundo, integro. *Plukn. Phyt.* 219. 9.

12. Rhus; Africanum; trifoliatum; majus; glabrum, ſplendente utrimque folio, ſubrotundo, medio quandoque crenato. H. R. D. *Boerh. Ind. Alt. Plant. Vol.* 2.

It is called *Rhus*, ῥοῦς, from ῥέω, *rheo*, to flow, becauſe it ſtops Fluxes. The Fruit, which is diſpoſed as it were in Cluſters, and is of a red Colour, and an acid and grateful Taſte, is of excellent Service in a Diarrhæa and Dyſentery, eſpecially when it is boiled with the Rinds of Pomegranates in Water. It is no leſs uſeful in an immoderate Flux of the Menſes, in the Diabætes, Hæmorrhoids, and Gonorrhæa. The Seeds of the Sumach are only the dry'd Grains, taken out of the Cluſters, and are not of ſo much Virtue, on account of their Dryneſs; and therefore the recent Berry is to be choſen, being excellent, particularly in reſiſting Putrefaction, and a Gangrene in a Paronychia. The Gum put in a Tooth eaſes the Tooth-ach. The tender Buds, and green Fruits before they are rendered ſucculent by Maturity, are of Service in a kind of hectic Fever, attended with profuſe Sweats, on account of the too great Tenderneſs, Flaccidity and Humidity of the Fibres. *Hiſt. Plant. aſcript. Boerhaave.*

Dioſcorides tells us, that the Herb *Phœnix*, φοῖνξ (which is a kind of *Lolium* diſtinguiſhed among the Latins by the Epithet *Murinum*) is called by ſome ῥοῦς, and by others *Anchinops*, ἀγχινωψ; but the ῥοῦς ἐρυθρὸς, *Red Rhus*, of the Greeks, is the Seed of the *Frutex coriarius*, or Sumach. As to this laſt Plant, there is no ſmall Controverſy among the Learned, whether there be ſeveral Species thereof, or only one, becauſe there are ſeveral mentioned, and thoſe under diſtinct Names, in the Writings of the antient Phyſicians. One they call ῥοῦς μαγειρικὸς (*Rhus Obſoniorum*), another ῥοῦς βυρσοδιψικὸς (*Rhus Coriariorum*) and a third ῥοῦς Συριακὸς (*Syrian Rhus*). Some perhaps will ſay that theſe are but different Names for the ſame Thing; but when all theſe three are mentioned in order one after another, it can ſcarce be ſuppoſed that they are meant of the ſame Thing. Now theſe three before named are mentioned one after another, as ſo many ſeveral Ingredients, in Hundreds of Compoſitions of *Myrepſus*, for Example, in his *third Plaiſter*, where we read, κιναμώμου, σιδίου, ῥοῦ μαγειρικοῦ, ῥοῦ Συριακοῦ, ῥοῦ βυρσοδιψικοῦ, "Cinamon, Malicorium, *Rhus Obſoniorum*, *Rhus Syriacum*, and *Rhus Coriariorum*." Upon this Conſideration *Fuchſius* concluded, and not without Reaſon, that there were as many Species as diſtinct Names of *Rhus*. But againſt his Opinion we have a ſtrong Argument from *Dioſcorides*, who affirms that the *Rhus Obſoniorum*, which ſome call *Erythrus* (red) is the Seed of the *Rhus Coriariorum*, where you may alſo obſerve a Difference in the Gender, for the Shrub is called ἡ ῥοῦς (*hæc Rhus*), but the Seed ὁ ῥοῦς (*hic Rhus*). When therefore we read ῥοῦς μαγειρικὸς in Authors, we muſt underſtand it of the Seed, which was applied to culinary Uſes, but when we meet with ῥοῦς βυρσικὸς, or βυρσοδιψικὸς, it is meant of the Shrub, whoſe Leaves were uſed in dreſſing of Leather. The *Rhus Obſoniorum*, or Seed, was alſo called abſolutely ῥοῦς, *Rhus*, as we find in *Galen's* Exegeſis, and had alſo the Addition of ἐρυθρὸς, *Red*, becauſe when mature it turn'd red.

But the chief Difficulty lies in determining the *Rhus Syriacum*, which *Myrepſus* ſeparates both from the *Rhus Obſoniorum*, and *Coriariorum*. *Theophraſtus* ſays, that the Shrub *Rhus* grows every where; he therefore deſcribed the *Rhus* which grew in *Greece*. But *Pliny* accommodates the Deſcription of *Theophraſtus* to the *Syrian Rhus*, and reckons the *Rhus* among the Number of exotic Plants which were peculiar to *Syria*, tho' *Theophraſtus* makes it to grow every where. Where we read in *Pliny*, *quod vocatur Rhus*, in a certain Manuſcript is expreſſed *quod vocatur Ros*; and agreeably to this we find in *Celſus Ros Syriacus*, which *Brodæus* and *Grinitus* interpret of Manna, as if he had ſpoken of the *Syrian Ros*, or Dew, and not of the *Syrian Rhos*, or *Rhus*. *Pliny*, *Lib.* 24. *Cap.* 11. reckons two Kinds of *Rhus*, as diſtinct from the *Rhus Syriacum*,

where he says, *Nec* Rhus *Latinum habet*, &c. "Nor have "we a Name in Latin for *Rhus*, tho' it be useful on many "Accounts." He goes on to describe three Kinds of *Rhos*, or *Rhus*; one an Herb with Leaves like the Myrtle, another which is the *Frutex coriarius*, and the third under the Name of *Rhus erythros*, which is the Seed of the second. As to the Herb *Rhus*, some take it for what some call *Rhus Montispessulanorum*, which is a Shrub with the Leaves of the *Oxmyrsine*; but the *Frutex coriarius* there mentioned, is the very same with that, *Lib.* 13, under the Name of the *Rhos Syriacum*. Many called the Seed ῥοῦς ἐρυθρὸς, to distinguish it from the Shrub. The Medicinal Lexicons of the modern *Greeks* take the ῥοῦς μαγειρικὸς, ἐρυθρὸς and Συριακὸς for the same Thing, and expound them all three by σουμακι, *Sumacin*, or σουμάκιον, *Sumacion*, and and it is certain that the Shrub which the *Greeks* called ῥοῦς, *Rhus*, is the same with what the *Arabians* now call *Sumac*, but as for the ῥοῦς Συριακὸς, *Rhus Syriacum*, I imagine there is no Difference between it and the common *Rhus*, in Genus or Species, but only in Goodness, and perhaps the Seed was brought out of *Syria*, as being the best and most proper for seasoning of Meat, in which it was employed, as *Pliny* says, instead of *Salt*, and with an Addition of *Silphium*, was thought to render all Flesh-meat more savoury and grateful to the Palate, *Salmasius de Homonym Hyl. Iatr. Cap.* 58.

RHYAS. ῥυὰς. The same as Rhoeas.

RHYEMA. ῥύημα. A Sort of Cake made of Honey and fine Flower.

RHYMA. ῥῦμα. A Remedy. *Castellus*, *Gorræus*.

RHYME. ῥυμη. The same as Rhope.

RHYMMA. ῥύμμα. From ῥύπω. to abstergе. An Abstergent Medicine.

RHYNDACE, ῥυνδάκη. A Sort of Bird about the Size of a Dove. *Hesychius*.

RHYPODES, ῥυπώδης. An Epithet for Medicines of a strigmentitious Consistence; from ῥυπος, *Sordes*. *Galen*, *de Comp. M. P. G. L.* 2. *C.* 1.

RHYPOS, ῥυπος, Sordes, Filth, in the Galenical Stile, is an Excrement of the third Concoction, and collected on the Superficies of our Bodies. For as each of the two Concoctions, both that which is performed in the Stomach, and that which is afterwards made in the Liver, leaves two Kinds of Excrement, one moist, and the other dry; so from the third Concoction arise, also, two Kinds of Excrement in every Particle of an Animal, being produced from the very Juices with which they are nourished. One of these Excrements is Sweat, which was before a Vehicle for transmitting Aliment, and is a thin serous Humour, like Urine; the other consists of half-concocted Reliques, which could not be assimilated to the Part in order to its Nourishment. This also is of a thin Substance, as being the same which is evacuated through the Pores of the Skin by insensible Transpiration; but it is mixed also with some grosser excrementitious Parts, whence it very frequently stops and stays at the Skin; and hence have the Hairs their Original, and, also, those *Sordes* which are still accumulated and diffused over the Skin. These *Sordes* were not unknown to the Ancients, who very carefully abstersed them from human Bodies, for various Uses, giving them the Name of *Strigmenta*, Strigments, as well as *Sordes*; the *Greeks* called them not only ῥυπος, *Rhypus*, but γλοιὸς, *Gloias*. They have the Virtue of moderately heating and discussing, which they acquire not so much from the Nature of our Bodies, as from the Mixture of Oil and Dust. For those *Sordes* which were abstersed with the Strigil in Baths, were a Mixture of Oil and Sweat; but those which were procured from the *Palæstra*, or Common-Place of Exercises, had, besides, an Addition of Dust, both that which was sprinkled on the Combatants after they were anointed with Oil, and also what was raised by stirring in the Heat of the Conflict: That kind of Sweat which was thus excited, was called by a peculiar Name πῶλος, *Patus*. Those *Sordes* then which had a greater Mixture of Oil, must be acknowledged to have more of an emollient Virtue; but those which had more of Dust in them, were more drying, discutient and digestive, especially if the Dust had more of Asperity and Acrimony than ordinary. For that Dust which is of a finer and more pinguious Substance than usual, and is what *Galen*, *Lib.* 5. *de Sanit. Tuend.* calls κόνις λιπαρὰ, "fat or greasy Dust," is of a more emplastic Nature, and prevents a Diffluence and Resolution of the Particles of the Body on which it is sprinkled. But of all *Sordes*, or *Strigments*, those are most discutient, as well as moderately drying and emollient, which were scraped off, by the Ancients, from Statues and Vessels of Brass or Copper, in which Oil was reserved for the Uses of the *Palæstra*, as having contracted somewhat of an *Aerugo* from the Metal, as *Paulus*, *Lib.* 7. observes. *Gorræus*.

RHYPTICOS. ῥυπτικὸς, from ῥυπτω, to abstergе. Abstergent.

RHYSIS. ῥυσις. A Flux, a Term much used by the Physicians of the Methodic Sect. See the PREFACE. In other Medicinal Writers, it imports a Hæmorrhage; a *Diarrhœa*, a Gonorrhœa, or a Falling of the Hair.

RHYSSEMATA. ῥυσσήματα. The Wrinkles and Sordes which appear upon the Skins of old People. *Castellus*. *Gorræus*.

RHYTHMOS. ῥυθμὸς. The Cadence or Harmony of the Pulse; or the due Proportion betwixt one Pulsation, and those which are subsequent. See Arythmos.

RHYTIDOSIS. ῥυτίδωσις. A Wasting, and Corrugation of the Eye. *Galen*.

RIAL ARMENIGOS. ῥίαλ ἀρμένιγος. A barbarous Name for an Antidote in *Nicolaus Myrepsus*, *Sect.* 1. *C.* 510.

RIBES.

The Characters are;

It is a Shrub without Prickles, with large Leaves; the Pedicle ends in an Ovary, crowned with a large Calyx, divided into five great Segments; the Flower is pentapetalous, five small Petals arising from the Interstices of the Segments, and is furnished with five Stamina; the Ovary emitting a long Tube from the Centre of the Apex, becomes a round Fruit, which is umbilicated, produc'd in Clusters, and full of small Stones.

Boerhaave mentions six Species of *Ribes*, which are; 1. Ribes; vulgaris, acidus; ruber. *J. B.* 2. 97. *Boerh. Ind. A.* 2. 54. *Ribes*, *Ribesia*, Offic. *Ribes*, *Grossularia*, Ind. Med. 56. *Ribes vulgaris fructu rubro*, Ger. Emac. 1593. Ind. Raii Hist. 2. 1485. Synop. 3. 456. *Ribes fructu rubro*, Park. Theat. 1561. *Ribes rubra*, Parad. 558. *Grossularia multiplici acino, sive non spinosa hortensis, rubra sive Ribes Officinarum*, C. B. P. 455. Tourn. Inst. 639. RED CURRANTS.

The Currant-tree is well known to be a somewhat taller Tree than the Goose-berry, with larger Leaves and Thorns without. The Fruit grows in small Bunches of a red Colour, and of a sharp sweetish Taste; it is usually planted in Gardens, but is said to grow wild in the North of England. It flowers in *April*, and the Fruit is ripe in *June*. They are cooling and grateful to the Stomach, quench Thirst, and are somewhat restringent; a Jelly made with the Juice and Sugar, is cooling and grateful in Fevers. Currants are very rarely used in the Shops. *Miller's Bot. Off.*

The Jelly of Currants is saponaceous and resolvent, and an excellent Medicine, as well in Fevers, as chronical Obstructions, if taken for a long Time together, diluted with Water.

Currants are of two Sorts, red and white, which have nearly the same sharpish Taste, which proceeds from the acid Salts plentifully contained in them, which are dissolved in a sufficient Quantity of Phlegm. These acid Salts render them cooling, and proper for allaying the Heat of the Bile, and other Humours. They contract the Stomach a little, and resist Poison. The frequent eating of Currants sometimes occasion little Prickings in the Stomach; but the over-sharpness may be qualified by mixing a little Sugar with them. Good Sweet-meats are made of Currants, and also a Liquor, with Water and Sugar called Currant-wine, used in the Heat of Summer to cool and moisten the Body. A cooling moistening Jelly is, also, made of them, which is used in Physic, and in Food, being very agreeable to the Taste; this mixed with Water is given feverish Patients to drink. Currant Leaves are astringent. *Lemery on Foods.*

2. Ribes; flore rubente. *J. B.* 3. 98. *Grossularia*, *hortensis*, *majore fructu rubro*. C. B. P. 455.

3. Ribes; quæ Grossulariæ; hortensis; majore fructu albo. *H. R. Par.*

4. Ribes; vulgaris; acidus; albas baccas ferens. *J. B.* 2. 98. *Grossularia*, *Hortensis*, *fructu Margaritis simili*. C. B. P. 455.

5. Ribes; alpinus; dulcis, *J. B.* 2. 98. *Grossularia*, *vulgaris*, *fructu dulci*. C. B. P. 455.

6. Ribes; nigrum vulgo dictum; folio olente. *J. B.* 2. 98. *Raii Hist.* 2. 1486. *Synop.* 3. 456. *Boerh. Ind. A.* 2. 254. *Ribes nigra*, Offic. Park. Parad. 558. *Ribes fructu nigro*, Theat. 1562. Ger. Emac. 1593. *Grossularia non spinosa*, *fructu nigro*, C. B. P. 455. THE BLACK CURRANT.

It flowers in June. The Fruit is recommended in a Quinsey, whence they are called Squinancy Berries. *Raii Hist. Plant.*

RIBESIA, a Name for the Ribes.

RICINOIDES.

The Characters are;

The Male Flowers consist of several Leaves, which are placed in a circular Order, and expand in Form of a Rose; these are barren. At remote Distances from these Flowers, upon the same Plant, are produced the Embryo's, which are wrapt up in the Flower-Cup, and afterwards become tricapsular Fruit, containing one oblong Seed in each Cell.

Boerhaave mentions two Species of *Ricinoides*, which are;

1. Ricinoides; Americana; folio Gossypii. *Tourn. Inst.* 656. *Boerh. Ind. A.* 253. *Nuces à Barbadoes*, Offic. *Ricinus Americanus*, Ger. 339. Emac. 496. Park. 183. Raii Hist. 1. 166.

166. *Ricinus Americanus major ſemine nigro*, C. B. P. 432. *Ricinus major Americanus Curcas dictus, & Faba Purgatrix Indiæ Occiduæ*, J. B. 3. 643. *Ricinoides, ſeu Pincus purgans, vel Pinhones Indici*, Cod. Med. 97. *Munduy-Guacu, ſive Nux Cathartica Americana*, Piſ. 169. *Mundubi-Guacù Braſilienſibus Pinhones Luſitanis, mihi Nux Cathartica*, *Marcg.* 96. *Quauhay-ohuatli* 1. *Avellana Cathartica*, Hern. 87. BARBADOES NUTS.

This grows in *Barbadoes*, and other Parts of the *Weſt-Indies*. The Fruit is oblong, oval, of the Size of a ſmall Bean, having one Side convex, the other depreſſed, including under a hard Pellicle a white Hemel. It agrees with the *Ricinus* in Virtues.

2. Ricinoides; Arbor; Americana; folio multifido. *Tourn. Inſt.* 566. *Boerh. Ind. A.* 253. *Palma Chriſti*, Tourn. Mat. Med. 75. *Ricinus Americanus tenuiter diviſo folio*, Raii Hiſt. 1. 167. *Avellana purgatrix*, C. B. P. 418. Raii Hiſt. 2. 1386. *Avellana purgatrix Novi Orbis*, J. B. 1. 322. *Avellanæ purgatrices*, Park. Theat. 1621. *Nuces purgantes*, Ger. 1362. Emac. 1546. PURGING NUTS.

This is an *American* Plant. The Nuts are of a whitiſh Colour, and are exceſſively cathartic. It is ſaid, that a ſingle Nut both vomits and purges for ſeveral Days, but that if the Pellicle is taken off, and it is divided into ſmaller Doſes, it purges gently. *Hiſt. Plant. Boerh. aſcript.*

RICINOKARPOS.

The Characters are;

The Male Flowers, which are diſpos'd in a Spike, are produced in the following Manner: At the End of a little Tender, hairy Pedicle, grows a naked, tripetalous, herbaceous, Floſcule, the Petali, which are acute, being expanded in the Form of a Star. From the Center of this Floſcule, which is raiſed in the Form of a Cone, are produced nine Stamina, each furniſhed with one Feſticulus.

Almoſt in the ſame Place of the Plant ariſe the Ovaries, furniſhed with ſhorter Pedicles, round, hairy, triangular, tricapſular, and tricircous, like the *Ricinus*. The Place whence the Flower and Ovary have their common Origin, is ſurrounded with a Sort of common Calyx, from which the Ecdicles of the Flowers are produced.

Boerhaave mentions two Sorts of *Ricinokarpos*, which are;

1. Ricinokarpos; Afra. *Mercurialis procumbens, dicoccos, Africana, folio violæ tricoloris.* Par. Bat. App. P. 10.

2. Ricinokarpos; Americana; flore albo ſpicato, foliis Circææ acutiori. *Boerh. Ind. Alt. Plant. Vol.* I.

RICINUS.

The Characters are;

The Root is fibrous; the Leaves are alternate, large, and ragged; the Flowers are ſome Male, ſome Female, on the ſame Spike of the ſame Plant. The Male Flower conſiſts of a monophyllous quinquefid Calyx, expanded like a Star, from whoſe Center ariſe Multitudes of fertile, Male Stamina, which appear, while they are beheld united, like a brachiated Thyrſus.

The Female Flower, or Ovary, conſiſts of three Cells growing to one Avis, and ſo reſembling a triangular Fruit, whoſe Apex is adorned with many Pinnulæ, from the Middle of which ariſe three Tubes, each of which has a rough, biſid Apex. Each Cell contains a ſingle Seed, in Shape and Bigneſs reſembling a Pine Kernel.

Boerhaave mentions five Sorts of *Ricinus*, which are;

1. Ricinus; vulgaris. *C. B. P.* 432. *J. B.* 3. 642. *Raii Hiſt.* 1. 166. *Tourn. Inſt.* 532. *Boerh. Ind. A.* 2. 253. *Cataputia major*, *Ricinus*, Offic. *Granadilla Peruviana* Pharmacop. *Ricinus*, Ger. 399. Emac. 496. *Palma Chriſti*, Cod. Med. 88. *Ricinus ſive Cataputia major vulgatior*, Park. Theat. 182. *Nhambu-Guacu ſive Ricinus Americanus*, Piſ. 180. MEXICO SEEDS.

This Plant grows to be as tall as a little Tree, with a ſmooth jointed hollow Stalk, a Finger thick or more, covered with a glaucous Mealineſs. The Leaves are large, roundiſh in Circumſcription, but cut into five, ſeven, or ſometimes nine ſharp pointed, and ſerrated Diviſions; the Foot Stalks are long, centring in the Middle of the back Part of the Leaves. The Flowers are ſmall and flaminous, growing on the Top of the Stalks, but lower down, and upon the Body of the Plant grow Bunches of rough triangular Huſks, each including three white Seeds leſs than Horſe Beans, which, in their brittle Shells, contain ſpotted Kernels, of a ſweetiſh oily Taſte.

Theſe Kernels, which are the only Part uſed, are given by ſome Perſons to purge watery Humours, which they do both upwards and downwards with great Violence; but conſidering we have much better and ſafer Purges to anſwer all Intentions, they are but ſeldom uſed. The Oil expreſſed from the Seeds, is good to kill Lice in Children's Heads. *Miller's Bot. Off.*

2. Ricinus; Americanus; major; caule vireſcente, *H. R. P.* 156.

3. Ricinus; Africanus; maximus; caule geniculato, rutilante. *H. R. P.*

4. Ricinus; Americanus; perennis.

5. Ricinus; vulgaris; minor. *C. B. P.* 432. *Erawai, Ricini puſillum genus.* Cluſ. Exot. 48. *Ricinus minor.* H. Eyſt. Æſt. o. 8. F. 11. F. 1. *Boerhaave Ind. Alt. Plant.* Vol. I.

It is called *Ricinus*, becauſe the Seed reſembles the Animal of that Name, which ſo greatly infeſts Dogs and Black-Cattle; it is alſo called *Palma Chriſti*, becauſe the Leaves are ſaid to reſemble the Palm of a Hand; and ſome believe it is the Tree which ſhaded *Jonas* after he was diſcharged from the Whale.

The fifth is called the *Purging-Bean*; of this is prepared the Oil of *Kerva*, the *Oleum Cicinum*, called the *Oleum Ficus Infernalis*; ſo much celebrated in the *Indies* as a Lenitive, tho' this be the moſt acrimonious of all the Species. If it be ſtripped of its Pellicle, it purges upwards and downwards to ſuch a degree, as to be preſcribed by *Hippocrates* in the room of the *Grana Cnidia*, or *Cervus Cnidius*. But being taken with this Pellicle, it purges ſo violently as to cauſe an Inflammation of the Stomach and Inteſtines, whence it may paſs for Poiſon. But tho' the Seeds are highly acrimonious, the Oil is very lenient, and excellent for a Rigor or Stiffneſs of the Limbs, and alſo for the Itch, Ulcers, and to deſtroy Worms. The fourth and fifth Species taken inwardly, work violently both by Stool and Vomit, whence they are preſcribed in Apoplexies, Lethargies, and as Hydragogues in Dropſies. *Hiſt. Plant. aſcript. Boerhaave.*

RICINUS is alſo a Name for an Inſect, which is thus diſtinguiſhed.

Ricinus, Offic. Schrod. 5. 345. Aldrov. de Inſect. 559. Jonſ. de Inſect. 91. Charlt. Exer. 52. *Ricinus Oſtapes*, Raii Hiſt. Inſect. 10. THE TICK.

It is a naſty little Animal, of a livid Colour, with a blunt and roundiſh Tail, and full of Blood, and very much infects Cows, Swine, Goats, Sheep and Dogs.

The Blood of thoſe Ticks which live about Dogs, as *Pliny* ſays, is a *Pſilothrum*, or Medicine to take off Hair, and mitigate an Eryſipelas; and we are told by *Amatus*, that it is an admirable Remedy for an obſtinate and malignant Impetigo. *Dale.*

RIGOR.

Before we treat of the Prognoſtics which may be drawn from *Rigors*, with reſpect to the Death or Recovery of the Patient, it will be neceſſary, firſt to ſettle the Notion of a *Rigor*; for if this be omitted, no certain Judgment in Diſeaſes can be formed from ſuch a Symptom. A *Rigor* then is a ſudden and violent, or as *Galen*, *Lib. de Trem. Palp. Convulſ. & Rigore*, ſays, "A doloriſic Perfriction or Refrigeration of the natural Heat, with an unequal Concuſſion and Agitation of the whole Body, proceeding from the expulſive Faculty of the ſenſible Part, endeavouring to expel the noxious Humours." It is diſtinguiſhed from a *Tremor*, in that a *Tremor* is only a Vibration of one Member, but a *Rigor* of the whole Body. But of this we ſhall ſpeak more accurately a little below. A *Rigor* ſometimes happens without a Fever, but generally attends it. That a *Rigor* may be excited without a Fever, we are taught by *Galen* in the Book abovementioned, *Cap.* 7. and *de Cauſ. Symptom. Sect.* 2. *Cap.* 5. and in his Book *de Inæqual. Temper. Cap.* 8. where he has demonſtrated, againſt the Ancients, that *Rigors* may happen without a Fever. And he himſelf obſerved at *Alexandria*, a young Man who was ſeized with a *Rigor*, after eating unripe Dates, from the groſs Humour obſtructing the Veins. That a *Rigor* could be without a Fever was unknown to the Ancients, except *Hippocrates*, who, 1 *Epid. Sect.* 3. *Aegr.* 5. ſays of the Wife of *Epicrates*, that "when the "Time of her Labour approached, ſhe was ſeized with a "Rigor, but had no Increaſe of Heat, as was ſaid; the next "Day the ſame Symptom continued, and the third Day ſhe "was delivered of a Daughter." There may be therefore a Rigor without a Fever, which *Galen* and the *Greeks* call ῥῖγος ἀπυρίεμαλον, "a Rigor without Heat;" but the *Rigor* which admits of Heat, as being ſucceeded by a Fever, is a violent, concuſſive and morbous Affection.

But how are we to diſtinguiſh a *Rigor* from a Coldneſs and a *Horror*? Since we are told by *Galen*, *de Trem.* &c. before cited, *Cap.* 6. "For a ſick Perſon to be under a *Rigor*, is "certainly not the ſame as to be under a *Horror* or *Coldneſs*." And it is uſual to ſay, that the Approach of the Fit is attended in one Patient with a *Rigor*, in another with a *Horror*, and in another perhaps only with a *Coldneſs*; and this is the common Language and Uſe of Words in the Writings of Phyſicians. Thus when a Perſon becomes vehemently cold, without any Concuſſion or Agitation of the Body, he is not affected with a *Rigor*; for to deſerve that Name, it muſt be attended with an unequal and involuntary Motion. If this Coldneſs be

accompanied only with a gentle and unequal Commotion of the Skin, it is called a *Perfriction*; but if this Commotion of the Skin be very conſiderable, and attacks the Patient by Fits, without attacking the whole Body, it is called a *Horror*; ſo that a *Horror* is ſuch an Affection of the Skin alone, as a *Rigor* is of the whole Body.

The Cauſes of a *Rigor* are, firſt, immoderate Heat or Cold: That theſe produce ſudden and great Alterations in the Body, and induce *Horrors* and *Rigors*, is very well known to ſuch as enter an immoderately cold or hot Bath, and is demonſtrated by *Galen*, *de Cauſ. Symptom. Lib.* 2. *Cap.* 5. Juſtly therefore it is ſaid by *Hippocrates*, that "Cold irritates "Ulcers, hardens the Skin, cauſes intolerable Pains and ſe- "brile *Rigors*." Some are ſeized with a *Horror* from an Exceſs of Fear, as others are with a *Tremor* from Ulcers and Abſceſſes under a Suppuration; and that *Rigors* are ſometimes induced by Section and Inuſtion, we are told by *Galen*, *in* 6 *Epid. Com.* 3. where he ſays, that "ſuch Operations in- "duce a *Rigor*, as from ſomething acrimonious affecting the "ſenſible Fleſh."

Agreeably to this Notion, the ſame Author rightly pronounces the principal Cauſes of a *Rigor* to be bilious and acrimonious Humours; for theſe, by vellicating the ſenſible Parts, provoke the natural Heat, which, in ſtriving with great Force to expel them, excites that unequal and concuſſive Motion of the whole Body, as he expreſſes it, *de Cauſ. Sympt. Lib.* 2. *Cap.* 5. Theſe *Rigors* are very apparent in bilious Fevers, eſpecially of the intermittent Kind. In theſe Caſes, the thin, bilious, and highly acrimonious Humours being expelled without the Veins, are under continual Impulſes from all the ſenſible Corpuſcles, and forced from one Place to another, till they take their Courſe either towards the Skin, and there diſcharge themſelves through its Pores in Sweat, or are thrown upon the Stomach, and diſcharged in vomiting, or forced downwards into the Inteſtines, and evacuated by Stool. Hence Rigors are uſually ſucceeded by bilious Evacuations, as *Galen*, *Com.* 2. *in* 6 *Epid.* obſerves, where he ſays, "In our Diſ- "courſe of a *Rigor* we have ſhewn, that Excretions of bitter Bile, which hurries through the ſenſible Bodies in order to be diſcharged, are the Conſequence of that Diſorder. This then is the Origin of a *Rigor*: The noxious and acrimonious Humours are, by the expulſive Faculty of the Veins, forced without thoſe Veſſels upon the other Parts, from which, ſince they as much infeſt and irritate them by their Acrimony, and excite their expulſive Faculty, as in the other, they are equally expelled and forced upon others; and thus ſucceſſively, till they make their Retreat to the Skin, Stomach or Belly, where they find a Vent, as has been ſaid. Now the injured and irritated Parts, in ſtriving to expel the noxious Humour, call in the natural Heat to their Aſſiſtance, whence the extreme Parts are refrigerated, being deſtitute of that Heat. But when the Expulſion of the Humours is finiſhed, which is when they have made their Way to the Skin, or ſome other Place, whence they may be excreted, the Heat is recalled, and the extreme Parts recover their Heat, and the ſooner and more effectually, if the natural Heat be vigorous; but if this be very weak, thoſe Parts are very ſlowly and inſufficiently heated, or hardly return to their uſual Warmth. Under this Expulſion of the Humours happens that unequal or irregular Concuſſion and Vibration of the whole Body, which we call a *Rigor*; during which the extreme Parts are refrigerated, the natural Heat retiring inwards; for which reaſon the Body is always cold under a *Rigor*.

This Affection, which we call a *Rigor*, is not only excited by acrimonious Humours, but ſometimes by a groſs Humour obſtructing the Veins. Of this Nature was the *Rigor* of the young Man of *Alexandria*, obſerved by *Galen* as above-mentioned; for which he accounts in the following Manner: "In "this Caſe a *Rigor* is occaſioned by an Obſtruction of the "Motion of the natural Heat by Force. For this Heat, being "entire and unimpair'd, both in Subſtance and Strength, "ſtrives to expand itſelf, and to be diſtributed into all Parts of "the Body; but being forcibly reſtrained, and repelled to the "more inward Parts, it retreats to its own Original; but "being incapable of making any Stay there (for to a Sub- "ſtance of a moveable Nature, Conſiſtence in Place is Death) "collecting, and, as it were, concentrating itſelf, it recurs "not with an equable and free Motion, but ruſhing forth "with an Impetus, and as it were a Horſe ſtarting from the "Barrier, it directs its full Force againſt what obſtructed its "Paſſage, endeavouring to propel the ſame, and clear the "Way; but being repelled, and its Violence check'd in the "Midſt, the whole Body is ſhock'd at the Encounter. For "beſides other Effects, it is rendered vaporous by daſhing "againſt thoſe Obſtacles, and recoils inwards, as tho' from "Repercuſſion, and retreats again to its Principle or Origi- "nal; thence again breaking forth, it falls on with more "Violence, and being again repulſed, renews its Attacks till "it has removed the Nuiſance." A *Rigor* begins at the Back and Loins; to which Subject relates that of *Hippocrates*, 5 *Aph.* 69. where he ſays, "A *Rigor* in Women begins prin- "cipally at the Loins, and proceeds by the Back to the "Head: In Men, they begin in the anterior rather than the "poſterior Parts of the Body, as in the Cubits and Thighs. "In Men alſo the Skin is of a rare Texture, as appears by "the Hairs."

But let this ſuffice for illuſtrating the Notion of a *Rigor*; we are now to examine what may be predicted from it; and here we ſhall treat firſt of ſuch *Rigors* as are of good Prognoſtication. Among *Rigors* obſerved in Fevers, thoſe are good which are periodic, and the proper Symptoms of Fevers. Periodic *Rigors* which happen every Day, or every ſecond or third Day, and precede intermittent Fevers, are all ſalutary, and by *Hippocrates*, 4 *Aph.* 43. pronounced void of Danger; and the more ſo in proportion to the Greatneſs of the Intermiſſion, and the Shortneſs of the Fit. *Hippocrates*, 4 *Aph.* 63. tells us, that "quotidian *Rigors* are ſolved by quotidian Fe- "vers;" for, as *Galen* ſays in his Comment on the Place, ſince *Rigors* happen with Commotion, through the whole Habit of the Body, ſucceeded by an Expurgation and Evacuation of the Humours, the Intermiſſions of ſuch Fevers may be rationally expected to terminate at laſt in an utter Ceſſation of the Diſorder. What he (*Hippocrates*) ſays of quotidian *Rigors*, that they are ſolved by quotidian Fevers, is as true of tertian and quartan *Rigors*, as appears from Obſervations on Tertian and Quartan Fevers, whoſe Returns are always preceded by a *Rigor*.

But the moſt ſalutary of all *Rigors* are critical ones; ſuch are thoſe which attend a Fever upon ſome critical Day, with Signs of Concoction, and are ſucceeded by copious and kindly Sweats, or Vomitings, or Stools, or an Hæmorrhage from the Noſtrils, which are followed by a perfect Removal, or at leaſt a remarkable Abatement of the Fever. Of ſuch *Hippocrates* ſpeaks, 4 *Aph.* 58. where we are told "if one under a burn- "ing Fever be ſeized with a *Rigor*, he becomes freed from "the Diſeaſe." There ſeem to be two Properties belonging to a good *Rigor*; the firſt is, that it be ſucceeded by a remarkable Heat, of which *Galen*, *Lib. de Trem. &c. Cap.* 6. aſſigns three Cauſes; firſt, that the natural Heat being repreſſed from the Superficies, is collected in the internal Parts, in order to aſſiſt in expelling the noxious Humours; after which being cheriſhed and increaſed by the Humour which reſides within, it breaks forth all at once, and expands itſelf with more Vehemence. Secondly, that in its violent Recourſe, its Motion being much accelerated, it kindles in ſtriking upon the external Parts, and is increaſed after the ſame manner as Stones and Iron acquire a conſiderable Heat by Motion and mutual Attrition. And laſtly, that the Heat, in its Return to the Superficies, brings along with it ſome hot Humour, which muſt have its Effect in heating the external Parts; and the more vigorous the State of the natural Heat, the hotter is the Body after a *Rigor*, and the weaker this Heat, the leſs Warmth will accrue to the Body. Hence it is a good Sign for Bodies to be well heated after a *Rigor*, ſince it indicates a Firmneſs and Strength of Nature, as on the contrary, which will appear hereafter, for a Patient, after a *Rigor*, to acquire little or no Heat, ſhews him to be in a very bad State, and that Nature is very weak and low. For the Body therefore to acquire an extraordinary Degree of Heat after a *Rigor*, by what Cauſe ſoever procured, is a very good Sign.

The other Property of a beneficial *Rigor* is, that it be ſucceeded by very beneficial Evacuations or Purgations; to which we may add, that it wholly removes, or at leaſt diminiſhes, the Fever. Such were the *Rigors* obſerved by *Hippocrates* in many of his Patients, particularly the Wife of *Epicrates*, *Charion*, the Virgin of *Lariſſa*, the Woman which lay ill at the Houſe of *Timeneus*, and *Philiſtis*. Of the Wife of *Epicrates*, 1 *Epid. Sect.* 3. *Aegr.* 5. he ſays, "On the four- "teenth Day (of her Illneſs) ſhe was ſeized with a new *Rigor*, "ſucceeded by a high Fever; on the fifteenth ſhe vomited at "ſeveral times bilious yellow Matter, ſweated, and was free "from a Fever; towards Night was highly feveriſh, and her "Urine was thick, with a white Sediment." And of *Charion*, 3 *Epid. Sect.* 2. *Aegr.* 5. we are told, that "on the "ſeventh Day he was ſeized with a new *Rigor*, had a high "Fever, ſweated all over his Body, and had a Criſis." In the ſame manner when he relapſed on the ſeventeenth Day, "he was taken with a new *Rigor*, ſucceeded by a high Fe- "ver, ſweated, had a Criſis, and was freed from his Fever." In his Account of the Virgin of *Lariſſa*, 3 *Epid. Sect.* 3. *Aegr.* 12. he tells us, "On the ſixth Day ſhe had a copious "Hæmorrhage from the Noſe, and was ſeized with a Horror, "ſucceeded by a copious and hot Sweat all over the Body, had "a Criſis, and was freed from her Fever." The Woman alſo at the Houſe of *Timeneus*, 4 *Epid T.* 25. had a *Rigor* ſucceeded by a happy Criſis. The ſame was the Caſe of *Philiſtis* the Wife

Wife of *Heraclides*, 7 *Epid.* 136. Sometimes a *Rigor* is a good Sign in an Hæmorrhage, as we find it pronounced, 1 *Prorrhet.* 150. where it is ſaid, that "they who in the Be- "ginning are moleſted with a copious Hæmorrhage, have the "Courſe of it ſtopped by a ſupervening *Rigor*;" and not without Reaſon, ſince, under an immoderate Evacuation, the Heat, together with the Blood, ſometimes retire to the inward Parts. A *Rigor*, however, in Diſeaſes of this Kind, portends their long Continuance; for as *Galen* ſays, in his Comment on the Place, "If an Eruption of Blood does not mitigate the "Diſorder, but is ſucceeded by a *Rigor*, both this and the "Diſeaſe are rendered of long Duration, becauſe the Body "is difficult to be heated." Sometimes *Rigors* portend a Criſis upon the Coming on of a *Tremor*, according to *Coac.* 27.

We have treated enough of ſuch *Rigors* as are eſteemed of good Prognoſtication in Diſeaſes, and are now to ſay ſomething of the contrary Kind, or thoſe which portend nothing but the Deſtruction of the Patient. Of this Nature, in the firſt Place, is a *Rigor* ſucceeded by little or no Heat; for this is an Indication of great Weakneſs of Nature, agreeably to 1 *Prorrhet.* 65. where we read, that "Refrigerations from a "*Rigor* not ſucceeded by Heat, are bad." And the Reaſon is, as *Galen* obſerves, becauſe it indicates an Extinction of the Heat, as it did in the Caſe of the Woman who lay ill in *Mendacium Foro*, 3 *Epid. Sect.* 2. *Ægr.* 12.

Thoſe *Rigors* are alſo pernicious which are ſucceeded by none, or a bad Evacuation, and are properly reckoned among thoſe bad or imperfect critical Signs which determine nothing. *Galen*, in 1 *Prorrhet.* diſcourſing on this Subject, ſays, "They "who underſtood this of a *Rigor* in general, ſhould have "always remember'd, that if it happened on the third or "fourth Day, it was a peculiar Symptom of ſuch Fevers; "but if it appeared after that Time, and was not attended "with a Criſis, it was of very bad Signification."

Rigors are of a very bad kind, when they are attended with ſome bad Excretion, becauſe they are of the Number of unde- termining critical Signs, which *Galen* affirms to be either mor- tal, or of difficult Criſis [that ſhew the Diſeaſe will have a fa- tal, or at leaſt a very hard and dangerous Turn.] On the ſame Point we read, 1 *Prorrhet.* 66. "If Heat returns not "upon a Perfriction, or extreme Perfrigeration, attended "with Sweating, it is a bad Sign; and if to thoſe there be an "Acceſſion of a burning Heat and Pain of the Sides, with "frequent Attacks of a *Rigor*, the Patient is in a dangerous "State." Now all cold Sweats are dangerous, eſpecially ſuch as affect the upper Parts, and thoſe which, tho' copious and profuſe, remove not the Fever. We find an Inſtance to this purpoſe, 1 *Epid. Sect.* 3. *Ægr.* 11. in the Wife of *Dromea- des*; in the Account of whoſe Caſe it is ſaid, "that on the "third Day about Noon ſhe had the Return of a *Rigor*, with "a high Fever, Urine as before, a Pain of the Hypochon- "drium, had a Loathing and Nauſea, a troubleſome Night, "without Sleep, with a cold Sweat diffuſed over all her Bo- "dy." She died on the ſixth Day. The Woman alſo who lay ſick in *Foro Mendacium*, had ſeveral Fits of a *Rigor*, at- tended with a cold Sweat before her Death. A copious Sweat alſo, tho' not cold, in a crude State of the Diſeaſe, which neither removes the Fever nor its Symptoms, is mortal; and eſpecially if it appears on the ſixth or eighth Day. Such was that obſerved by *Hippocrates*, 1 *Epid. Sect.* 3. *Ægr.* 12. in the Perſon who was taken ill of a Fever after Supper, of whom he ſays: "On the eighth Day he was ſeized with a *Rigor*, had "a high Fever, ſweated much, ſeemed to be without a Fever, "ſlept little, and was cold after Sleep." On the eleventh Day he died. And we read, *Coac.* "that repeated Fits of a "*Rigor*, with Sweating, are mortal." All *Rigors* therefore, ſucceeded by a bad Evacuation, or none at all, are bad.

With Reſpect to a Fever, *Rigors* which neither remove nor alleviate the Diſorder, are of a very bad Kind. Thus has *Hippocrates* determined, 4 *Aph.* 56. "A *Rigor*, he ſays, "coming upon a Fever, if the Diſeaſe is not mitigated, is a "bad ſign." [In that Aphoriſm it is a *Sweat*, and not a *Ri- gor*; but the Aphoriſm which would pretty well anſwer the Purpoſe, is 4 *Aph.* 46. which is, "that a *Rigor* coming up- "on a Fever, and the Diſeaſe not intermitting, if the Pa- "tient be weak before, is mortal."] But the Caſe is worſt of all, when a *Rigor* of this Nature is ſucceeded by a copious Evacuation, as *Galen* rightly obſerves in his Comment on 4 *Aph.* 46. "For if, he ſays, an Evacuation follows a *Rigor*, "and the Fever be not alleviated thereby, the Patient muſt "probably ſink under them in Conjunction; both becauſe the "weak Condition of his Body cannot bear the Agitation of "the *Rigor*, and alſo becauſe the Evacuation is ſufficient to "cauſe his Diſſolution." But if the Strength of the Patient be very much exhauſted by the Diſeaſe, a *Rigor* will prove mortal, according to 4 *Aph.* 46. before quoted; for all *Ri- gors*, of what kind ſoever, which happen under a great De- cay of Strength, are pernicious, as indicating an Extinction of the natural Heat. And to this purpoſe are we to underſtand the Author of 1 *Prorrhet.* 65. where he ſays, that "a Re- "frigeration from a *Rigor*, where the Heat returns not a- "gain, is a bad Sign." And *Coac.* 221. "a *Rigor* coming "upon a ſevere Fever, with a Diſtortion of the Eyes, proves "mortal." Perhaps alſo what *Hippocrates* ſays, 7 *Aph.* 7. "A *Rigor* and Delirium after a Debauch, are bad," may be applied to theſe Kinds of *Rigors*; for ſuch a *Rigor* is occa- ſioned, as *Galen* on the Place obſerves, from an Extinction of the Heat by an Oppreſſion, in the ſame manner as a Fire is extinguiſhed by heaping too much Wood upon it, or a Lamp by pouring on too much Oil.

The pernicious Signification of *Rigors* is alſo known from other preceding, concomitant or ſubſequent bad Signs. In a continual Fever, a *Rigor*, attended with bad Signs, is always to be dreaded. This will appear from what *Hippocrates* ſays of them, 1 *Epid.* "When burning Fevers, he ſays, began "(to be epidemic) they afforded Signs by which one might "judge when they were like to prove mortal; the Patients "were firſt ſeized with a high Fever ſucceeded by a *Rigor*, "were incapable of Sleeping, were extremely reſtleſs, thir- "ſty, and loathed *every thing*." In Phrenſies alſo accom- panied with white Stools, or white Urine, the Acceſſion of a *Rigor*, is a bad Sign, as we are told, 1 *Prorrhet.* 13. and *T.* 64. it is ſaid, "that for a Perſon under a *Rigor* not to "know his familiar Acquaintance, and to be forgetful of "what is paſt, is a bad Sign;" as it indicates, as *Galen* ſays in his Comment, that the natural Heat is overcome by the extraordinary Refrigeration. And a little after, 1 *Prorrhet.* 67. "Burning *Rigors* [Καυματώδια ῥίγια] are not without Dan- "ger; and when accompanied with a fiery Redneſs [τὸ ῥοδω- δες] of the Face, and a Sweat, are bad Signs." This is re- peated, *Coac.* 7. And again, *T.* 89. ſpeaking of theſe Kinds of *Rigors*, he ſays, "For a Perſon labouring under a Fever, "and a Laſſitude, with a Diſtortion of the Eyes, to be ſeized "with a *Rigor*, is of pernicious Signification; and a coma- "tous Diſpoſition in ſuch Caſes is bad." Again, *Coac.* 14. "Severe *Rigors*, inducing a *Torpor*, are malignant," as in- dicating an Extinction of the natural Heat. And, *T.* 22. "*Rigors* accompanied with Head-ach and Faintings, are "mortal;" becauſe they indicate a conſiderable Inflammation of the Brain. Our Judgment, therefore, of the bad Event of a *Rigor*, is juſtified by the Concomitance of other bad Signs. This is further illuſtrated, *Coac.* 20. or more clearly, 1 *Pror- rhet.* 101. where it is ſaid, that "ſuch as labour under repeated "Fits of a *Rigor*, which is exaſperated towards Night, with "Watchings or Agitations of the Veins [φλεβοδωνώδια, ſee the "Article PHLEBODONODES] in Sleep, and involuntary "Diſcharges of Urine, fall at laſt into a Coma and Convul- "ſions." *Rigors*, therefore, in an acute Fever, in Con- junction with other bad Signs, render the fatal Event more eaſily to be prognoſticated.

Continual and frequent *Rigors* are alſo of a bad kind, as we find them pronounced, *Coac.* 9, 10. ſince they indicate either a Suppuration of ſome one of the Viſcera, or vain Efforts to- wards a Criſis, or elſe an Extinction of the natural Heat. We have an Inſtance to this purpoſe, in the Woman who lay ill in *Foro Mendacium*, before quoted; and whoſe Hiſtory will greatly ſerve to illuſtrate what has been ſaid of mortal *Rigors*; for ſhe was often ſeized in the Progreſs of the Diſeaſe with *Ri- gors*, which were always attended with pernicious Signs. The Caſe is as follows, 3 *Epid. Sect.* 2. *Ægr.* 12. "A Woman "who lodged in the *Forum Mendacium*, after hard Labour "with a male Child, was taken ill of a violent Fever, at- "tended at firſt with a Thirſt, Loathing, and Cardialgia; "her Tongue was dry, her Stools were thin, and little in "Quantity, and voided after much Pain and Gripings, and "ſhe had no Sleep. The next Day ſhe felt ſomewhat of a "*Rigor*, ſucceeded by a high Fever, and ſomething of a cold "Sweat about the Head. On the third Day, the Stools were "crude, thin, much in Quantity, and voided with Pain. On "the fourth ſhe had a new Fit of a *Rigor*, all the Symptoms "were exaſperated, and ſhe could take no Sleep. On the "fifth ſhe was very ill; and on the ſixth continued in the "ſame State, and voided Plenty of liquid Matter by Stool. "On the ſeventh Day ſhe was ſeized with another Fit of a "*Rigor*, ſucceeded by a high Fever, a great Thirſt, and "continual Toſſing, and towards Night, with a cold Sweat "all over the Body, with a Coldneſs of the extreme Parts, "into which the Heat could not be recalled. At Night ſhe "had another Fit of a *Rigor*, and her extreme Parts reco- "vered no Warmth; ſhe had no Sleep, was a little delirious, "but ſoon came to herſelf again. On the eighth, about "Noon, ſhe recovered Heat, had a Thirſt, with a Coma, "and a Nauſea, and vomited up ſome bilious yellowiſh Mat- "ter, tho' but little in Quantity; ſhe had a bad Night, paſ- "ſed it without Sleep, and great Plenty of Urine came from "her involuntarily. On the ninth, all the Symptoms were

" remitted, and ſhe was inclined to a Cerna; in the Even-
" ing ſhe had ſomething of a *Rigor*, and vomited a little bi-
" lious Matter. On the tenth ſhe had a new Fit of a *Rigor*,
" the Fever was exaſperated, and ſhe had no Sleep; in the
" Morning ſhe made great Plenty of Water, which had no
" Hypoſtaſis, and her extreme Parts recovered Heat. On
" the eleventh ſhe vomited virulent, bilious Matter, and ſoon
" after was again ſeized with a *Rigor*, and a Refrigeration of
" the extreme Parts; towards Evening ſhe fell into a Sweat
" with a *Rigor*, vomited much, and had a very bad Night.
" On the twelfth ſhe vomited up much black, fetid Matter,
" and was much moleſted with the Hiccup, and a Thirſt.
" On the thirteenth ſhe was ſeized with a *Rigor*, and vomit-
" ings of much black Matter, which had a very ill Smell;
" about Noon ſhe loſt her Voice. On the fourteenth Blood
" came from her Noſe, and ſhe died. The whole Courſe
" of the Diſeaſe was a Looſeneſs and a Horror. The Wo-
" man was about ſeventeen Years of Age." *Proſper Alpinus de Preſag. Vit. & Mort. Ægrot.*

RIGOR. A Stiffneſs or Inflexibility.

RIGOR NERVORUM, is the ſame as Tetanus.

RILLUS, is defined by *Rulandus*, a chemical Utenſil, into which melted Metals are poured, in order to impart to them an oblong Form.

RIMA. A Fiſſure, or Chap. In Anatomy it imports, the Fiſſure of the Female Pudenda.

RIMULA. The Aperture of the *Glottis*.

RINÆUS MUSCULUS. The Name of a Muſcle of the Noſe mentioned by *Douglas*, which he, alſo, calls *Naſalis*, and ſays it ariſes fleſhy from the Extremity of the Os Naſi, and adjacent Part of the Os Maxillare.

It is inſerted into all the Cartilages of the Ala.

Its Uſe is to open and dilate the Noſtril, by pulling that Part outwards.

RINAR. *Rulandus* explains this, *Limatura*.

RIPARIUS. An Epithet of Animals which frequent the Banks of Rivers, or the Sea-ſhore.

RISIGALLUM. The ſame as AURIPIGMENTUM.

RISTORUM. A kind of nouriſhing Aliment prepar'd of the Yolks of Eggs. It ſeems to be a Sort of Egg Caudle.

RISUS. Laughter. See RESPIRATIO. See SARDONIUS.

RITRO, Offic. *Echinopus minor*, J. B. 3. 72. Tourn. Inſt. 463. *Carduus globoſus minor*, Ger. 990. Emac. 1151. Park. Parad. 332. *Carduus Sphærocephalus cæruleus minor*, C. B. 381. Raii Hiſt. 1. 383. *Scabioſa Cardui folio Sphærocephala humilior*, Herm. Cat. 539. LITTLE GLOBE THISTLE.

It is cultivated in Gardens, and flowers in *June*. The Root is uſed, and poſſeſſes the ſame Virtues as that of the ECHINOPUS MAJOR.

RIWAND, and RIWANDTZINI, are Arabic Words, importing Rhubarb.

ROADES, in *Paracelſus*, is an unſkilful, ſimple Phyſician.

ROB. See DECOCTIO.

ROBERTIANUM. See GERANIUM.

ROBES. Vinegar. *Rulandus*.

ROBIGO. The ſame as RUBIGO.

ROBORANTIA. Strengthening Medicines. See ANALEPTICA.

ROBUR. The Oak. See QUERCUS.

ROBYS. An Epithet for the beſt Sort of Wheaten Bread. *Caſtellus from Langius*.

ROCELLA. See FUCUS.

ROCHETTA. *Antonio Neri* informs us, that *Polverine* or *Rochetta*, which comes from the Levant and Syria, is the Aſhes of a certain Herb growing there in Abundance: There is no doubt but that it makes a much whiter Salt than *Barillia* of Spain, and therefore when you would make a Cryſtal very perfect, make it of Sut extracted from Polverine or Rochetta of the Levant. For tho' Barillia yields more Salt, yet Cryſtal made of it inclines to a Blueneſs, and has not the Whiteneſs and Fairneſs of that made of Polverine.

Upon this *Merret* remarks, that Polverine and Rochetta are the ſame Thing, and are nothing more than Aſhes extracted from the ſame Plant, but differing in Goodneſs. The Name of the latter is wholly unknown to our Glaſs-Houſes, and has now no Diſtinction at *Moran* itſelf. The Name of Polverine is ſtill kept, and 'tis given to all Aſhes which come from the Levant to make Glaſſes with. The Reaſon then of their different Names ſeems to be, that the Polverine was that which was brought in ſmall Powder, and the other in hard Pieces or Stones, and therefore named *Rochetta*. And indeed the Workmen obſerve, that the harder and bigger Lumps yield a whiter and ſtronger Salt than that which comes over in ſmall Pieces or Powder. And whether this proceeds from the Seaſons of their Growth, Gathering and Burning, or from ſome Sophiſtication from other fixed Salts mixed with it, or from Sea-Salt or other Moiſture with which they are damaged, I determine not. But certain it is, that to make the ſtrongeſt Salt, and ſuch as will come into hard and ſtony Lumps, they make a Lee of their firſt burnt Aſhes, and therewith water the Herbs to be next burnt, and ſo water the Herbs with new Lees at every Burning, and this will make a moſt ſtrong Pot-aſh for Soap-boylers and Dyers: Tho' I cannot affirm that this Method has been practiſed in making *Rochetta*, and that it is now omitted.

ROCHUM ALUMEN. Rock Alum.

RODODENDION. See NERIUM, and ÆGOLETHRON.

ROGGA. A Name for the *Secale*; *Hybernum, vel majus*.

ROHOB. The ſame as ROB.

ROMANA ADRIANA ANTIDOTUS. The Name of an Antidote deſcribed by *Nicolaus Myrepſus*. Sect. 1. C. 5.

RONAS. A Root uſed much by the Perſians, for dying a red Colour. I don't know that it is uſed in Medicine.

RONDELETIA.

The Characters are;

It hath a Salver ſhaped Flower, conſiſting of one Leaf, which is tubulous, and reſts on the Empalement; which Empalement afterwards becomes a roundiſh coronated Fruit, divided into two Cells, containing many ſmall Seeds.

Miller mentions but one Sort of this Plant, which is, *Rondeletia arboreſcens, tini facie*, Plum. Nou. Gen.

This Plant was diſcovered by Father *Plumier*, in *America*, who gave it this Name in Honour to *Gulielmus Rondeletius*, a famous Phyſician of *Montpelier*.

The Seeds of this Plant were ſent to England by Mr. *Robert Millar* Surgeon, who collected them on the North-ſide of the Iſland of Jamaica, where the Trees grow plentifully, as alſo in ſeveral Parts of the *Spaniſh* Weſt Indies. *Miller's Dictionary, Vol.* II.

RONDESSA. A Sort of American Cat, which is ſaid to take her Young into her Belly, and bring them out again at Pleaſure. *Caſtellus* from Eph. N. C.

RORELLA. A Name for the *Ros Solis*.

RORIFERUS. Roriferous. An Epithet applied by ſome Anatomiſts, to the lacteal and lymphatic Veſſels.

ROS. Dew.

If in a long continued Summer's Drought, the Surface of the Earth comes to be greatly parched with the Heat of the Sun, not only Water, but, alſo, other leſs volatile Subſtances, of an unctuous and ſaline Nature, will thus be raiſed to ſome Height into the Atmoſphere, tho' inviſibly, ſo long as ſuch Exhalations are agitated by the Sun's Heat, which coming to leſſen towards the Evening, the Air ſoon grows cooler; while at the ſame time, the Earth retaining the Heat much longer than the Air, ſtill continues to breath out hot Exhalations, whence ariſes a white, denſe, viſible Vapour, hotter below than above; this Vapour appears, therefore, firſt in low watery Places, thence gradually diffuſes itſelf, ſo as in the Night to cover the Surface of the Earth with a Miſt, which is diſſipated by the Riſing Sun. This Moiſture, called by the Name of Dew, is a very compound Subſtance; nor can we aſſert any Thing that will hold univerſally true of its peculiar Nature. It muſt needs be a Chaos, as it is a Collection of all Sorts of volatile Particles, promiſcuouſly jumbled together by the Heat of the Sun, acting upon the Earth; it muſt, alſo, be different in different Parts of the Earth, according as different Kinds of Particles lodge therein. Thus in large Tracts of gravelly or Heath Ground, which lie dry and high, it will be ſmall in Quantity, and almoſt totally aqueous; as in fat bituminous Earths, near Marſhes, and ſtanding Waters, it is far different in Quantity and Quality, and prejudicial to Health; whence it is no Wonder that Chymiſts, in their analyſing of Dew, ſhould find ſuch different Reſults, that ſcarcely any two are agreed about them. Certainly they who ſeek for the Spirit of Life, the univerſal Solvent, the Mercury of Life, the Nitre and Steel of *Sendivogius*, in Dew, ſeem not to underſtand them right; it is better to ſay, that Dew is of a ſubtile ſaponaceous Nature, capable of ſupporting Vegetables. Some Dew that had been collected in a certain Part of the Earth, has afforded a Liquor, by Diſtillation, which ſtruck the Colours of the Rain-bow upon Glaſs, ſo ſtrong as not to be effaced by Friction, alcaline Lixiviums, or *Aqua Regia*; it, alſo, burnt like Spirit of Wine. Again, ſome diſtilled Dew having been digeſted with gentle Heat, for eight Days, and then rectified ſix Times over, till it was exceedingly ſubtile, is reported to have broke three Glaſs Veſſels ſucceſſively, tho' it ſtill remained perfectly inſipid. Again, ſome Dew is deſcribed to be like a yellowiſh Butter, that melts by being rubbed upon the Hand, yet grows hard and dry with a moderate Heat, being of a fetid Odour, and to be found in pretty large Lumps in the Night, eſpecially in the Spring and Winter. The Nature of Dew, alſo, differs ſurpriſingly with the different Seaſons of the Year, and the various Succeſſions of Meteors; hence exceedingly ſmall Seeds of Vegetables, and inviſible

Eggs of minute Animals, with numerous other Things coming to be digeſted, fermented or putrefied therein, it muſt afford many very different Productions by Diſtillation; whence Chemiſts have formed very odd Opinions about it. We can only ſay that the greateſt Part of it is Water; and that the other Parts cannot be aſcertained on Account of their infinite Variety. *Boerhaave's Chemiſtry.*

ROSA.

The Characters are;

It is a Shrub generally covered with a prickly or thorny Bark; the Leaves are pinnated, and end in an odd Lobe. The Extremity of the Pedicle forms an Ovary almoſt ſpherical, and ſurrounded on the Top with a Crown deeply cut into five Parts, radiated, and with its five long laciniated Segments reſembling a Calyx. The Flower is pentapetalous, the Petals ariſing from the internal Margin of the Calyx; whence alſo are produced very numerous Stamina. The Ovary produces from the Center of the Apex a ſmall Head, adorned with a Multitude of fimbriated Tubes, and becomes an unicapſular Fruit, full of vaſt Numbers of angulous hairy Seeds, and furniſhed with a foliaceous Apex.

Boerhaave mentions thirty-nine, and *Miller* forty-nine Species of Roſes; but thoſe principally uſed in Medicine are the ſeven following:

1. ROSA CANINA. *The Common Briar or Dogs-Roſe.* See CYNOSBATOS.

2. ROSA DAMASCENA, *pallida*, Offic. *Roſa Provincialis, ſive Damaſcena*, Ger. 1079. Emac. 1261. *Roſa Damaſcena*, Park. Theat. 1017. Parad. 413. Raii Hiſt. 2. 1468. *Roſa Purpurea*, C. B. P. 481. Tourn. Inſt. 637. *Roſa Damaſcena, flore pleno*, Boerh. Ind. A. 2. 152. *Roſa rubello, flore majore, multiplicato, ſive pleno, incarnata vulgo*, J. B. 2. 36. *An Roſa incarnata vulgaris*, Mont. Ind. 51. THE DAMASK-ROSE.

The Damaſk-Roſe grows not ſo tall, nor ſo large as the white Roſe, but yet taller and fuller of Prickles than the red, eſpecially about the Stalk. The Leaves are whiter and more hairy. The Flowers are leſs double than the *Provence* Roſe, and the Beards prickly; they are of a pale red Colour, and of a moſt pleaſant Scent.

The Flowers are of a gentle cathartic Nature, purging choleric and ſerous Humours, being given to Children and weakly Perſons, and mixed frequently with ſtronger Cathartics.

Officinal Preparations of Damaſk-Roſes, are the *Syrupus è Succo Roſarum*, *Syrupus Roſaceus ſolutivus*, the *Aqua Roſarum Damaſcenarum*, and the *Electuarium è Succo Roſarum. Miller's Bot. Off.*

AQUA ROSARUM DAMASCENARUM. WATER OF DAMASK-ROSES. See AQUA.

ELECTUARIUM E SUCCO ROSARUM. ELECTUARY OF THE JUICE OF ROSES. See ELECTUARIUM.

SYRUPUS E SUCCO ROSARUM.
Syrup of the Juice of Roſes.

This is prepared without any Infuſion, from the expreſſed Juice of the Flowers, with the ſame Proportions of Sugar to the Quantity of Juice as directed in the *Syrupus Roſaceus Solutivus.*

SYRUPUS ROSACEUS SOLUTIVUS.
Solutive Syrup of Roſes.

Take of boiling Water, four Pound; ſtir into it as much freſh Damaſk-Roſe Leaves as it will contain; let them ſtand together in a warm Infuſion for twelve Hours, and then preſs it out ſtrongly. Let this again be heated, and new Flowers ſtirred in, and ſteeped as before; and proceed to a third Repetition of the ſame, every Time increaſing the Quantity of the Flowers put in, in proportion to the Liquor, which every time will increaſe almoſt one Third. When this is all finiſhed, to ſix Parts of the Liquor put four Parts of white Sugar, and boil into a Syrup with a Bath-Heat, according to Art.

This is the ſame as in the former Diſpenſatory of the College, but at firſt was ordered to be repeated nine times in the Infuſion; but the Shops have been hitherto moſt accuſtomed to make it from the clarified Juice of the Roſes, or from their Reſiduum after Diſtillation.

3. ROSA PALLIDA, Offic. Ind. Med. 98. Chomel. 12. *Roſa rubra pallidior*, C. B. P. 481. *Roſa holoſerica*, Lob. Icon. 2. 207. *Roſa ſativa*, IV. Dod. Pempt. 187. *Dale* makes a Doubt whether this be not of the ſame Species with the Damaſk-Roſe.

4. ROSA PALLIDA, Offic. *Roſa maxima multiplex*, C. B. P. 481. Tourn. Inſt. 637. *Roſa Hollandica, ſive Batava*, Ger. 1081. Emac. 1262. *Roſa Provincialis, ſive Hollandica Damaſcena*, Park. Parad. 413. Raii Hiſt. 2. 1469. *Roſa Hollandica rubella plena quibuſdam, centifolia, ſpinoſo frutice*, J. B. 2. 37. THE DAMASK PROVINCE ROSE.

It is common in Gardens, and flowers in *July*; the Virtues are the ſame with thoſe of the common Damaſk-Roſe.

5. ROSA RUBRA, Offic. Ger. 1079. Emac. 1261. Raii Hiſt. 2. 1468. *Roſa rubra multiplex*, C. B. P. 481. Tourn. Inſt. 636. *Roſa rubra Anglica*, Park. Parad. 412. *Roſa rubra valde plena*, J. B. 2. 34. THE RED-ROSE.

This Roſe generally grows in lower Buſhes than the White Damaſk Roſes; the Flowers have very few Prickles on the Stalks, and the Calyx or Beards are ſhorter and ſmoother; they are leſs double than either the White or Damaſk, having a great many yellow Anthera in the Middle.

The Red-Roſe is more binding and reſtringent than the Damaſk and White, and good againſt all Kinds of Fluxes; they ſtrengthen the Stomach, prevent Vomiting, and ſtop tickling Coughs, by preventing the Defluxion of Rheum, and are of great Service in Conſumptions. The Antheræ or Apices are accounted Cordial, though they are but ſeldom uſed.

Officinal Preparations are, a *Simple Roſe-Water*, *Conſerva Roſarum*, *Saccharum Roſarum*, *Syrupus è Roſis ſiccis*, *Mel Roſarum*, *Oleum Roſarum*, *Unguentum Roſarum*, *Tinctura Roſarum*, & *Species Aromaticum Roſatum. Miller's Bot. Off.*

The Parts in Uſe are the Flowers and the *Antheræ*, which are yellow Floſcules, which adhere to the Capillaments in the Middle of the Flowers.

The Flowers are of principal Uſe in Fluxes, Fevers, Thirſt, and Loſs of Appetite. Outwardly they are of Service in Vomitings, Head-ach, want of Sleep, Pains of the Ears and Gums, and of the Anus; in Ulcers of the Mouth, Fauces and Eyes. The Antheræ dried, are uſed in Dentifrices for Aſtriction of the Gums. *Dale.*

Roſes are of ſingular Service in Medicine, ſince the Water diſtilled from them in Conſequence of its fragrant Oil, is highly friendly to Nature; and whether internally exhibited, or externally applied, excellently calculated for recruiting the Strength, and alleviating Pains and Inflammations in all hot Diſeaſes. Conſerve of Roſes, by means of its cordial and aſtringent Virtues, is peculiarly adapted and appropriated to pthiſical and hectic Patients. Vinegar of Roſes, mixed with the Spirit and Water of Roſes, adding Nitre and a little Camphire, makes an Epithem, which, when applied to the Head, I have, from repeated Experience, found to be of incomparable Efficacy in removing Head-achs, preventing Deliriums, and ſtopping immoderate Hæmorrhages from the Noſe. *Hoffman de Præſt. Remed. Domeſt.*

CONSERVA ROSARUM. See CONSERVA.

MEL ROSARUM. Honey of ROSES. See MEL.

OLEUM ROSARUM. See OLEUM.

SACCHARUM ROSATUM TABULATUM.
Lozenge-Sugar with Roſes.

Take of Red-Roſe Leaves without the white Heels, and haſtily dried in the Sun, one Ounce; of the whiteſt Sugar, one Pound. Melt the Sugar over the Fire in Roſe-Water, and the Juice of the ſame, each two Ounces; and after due Evaporation, mix with it the Roſes in fine Powder, and pour it upon a Marble, ſo as to make it into Lozenges.

SPECIES AROMATICUM ROSATUM. See AROMATICA.

SYRUPUS E ROSIS SICCIS.
Syrup of dried Roſes.

Take two Quarts of hot Spring-Water, and in it infuſe half a Pound of Roſe-Leaves, haſtily dried in the Sun; the next Day preſs out the Liquor, and with two Pounds of Sugar boil it up to a Syrup.

TINCTURA ROSARUM RUBRARUM.
Tincture of Red Roſes.

Take half an Ounce of Red-Roſe Leaves, well cleared of the white Heels, and thirty Drops of Oil of Vitriol; pour upon them in a glazed earthen Veſſel two Pints and an half of boiling Spring-Water, and let them ſtand cloſe covered for three Hours; then ſtrain off the Liquor, and put to it three Ounces of fine Sugar-Candy.

UNGUENTUM ROSATUM.
Ointment of Roſes.

Take of Hogs-Lard, cleared from all its Membranes, and well waſhed, one Pound; and add to it one Pound of freſh Red-Roſes; which ſuffer to ſtand together for ſeven Days; then boil them over a gentle Fire, and preſs out the Lard; then macerate again with freſh Roſes the ſame Space of Time, and boil and ſtrain as before. Laſtly, put to it ſix Ounces of the Juice of Red-Roſes; of Oil of ſweet Almonds two Ounces, and boil over a ſlow Fire, to a Conſumption of all the Juice; then ſtrain it again, that it may become an Ointment.

6. ROSA ALBA, Offic. Ger. 1079. Emac. 1260. Raii Hiſt. 2. 1473. *Roſa Anglica alba*, Park. Parad. 412. *Roſa alba vulgaris major*, C. B. P. 482. Tourn. Inſt. 637. *Roſa alba, flore pleno*, Boerh. Ind. A. 2. 251. *Roſa candida plena*, J. B. 2. 44. THE WHITE-ROSE.

The White-Roſe Tree grows taller than moſt other Kinds of Roſes, having fewer Prickles on the Branches, and thoſe pretty large; the Leaves are of a dark green Colour; the Flowers are white, and more double, or fuller of Leaves than the Damaſk or Red, having a leſs fragrant Scent than either of them.

The Flowers only are uſed, being drying, binding and cooling, and the Water diſtilled from them, is much uſed in Collyriums for ſore inflamed Eyes, being the only officinal Preparation from them. *Miller's Bot. Off.*

7. ROSA MOSCHATA, ſimplici flore. *C. B. P.* 482. *Tourn. Inſt.* 637. *Roſa Moſchata minor, flore ſimplici*, J. B. 2. 45. Raii Hiſt. 2. 1474. *Roſa Moſchata ſimplex*, Park. Parad. 417. THE MUSK-ROSE.

It grows in warm Places, but was never uſed among us; it purges violently.

ROSA HIERICHUNTICA. A Name for the *Myagrum*; *ex Sumatrâ, & Syriâ; ſemine ſpinoſo, ſimili Capiti Aviculæ.*

ROSALIA. A Name for the Meaſles; or for a Diſtemper reſembling the Meaſles, conſiſting in Petechial Eruptions, or Aſperities of the Skin. *Caſtellus* from *Martianus.*

ROSBOTH. A ſoft Excreſcence of a hard Part. *Caſtellus* from *Avicenna.*

ROSCA. An *Eryſipelas.* Rulandus.

ROSCOLÆ. The Meaſles.

ROSIO. Corroſion.

ROSMADIAN. Mercury of the Philoſophers.

ROSMARINUS.

The Characters are;

It is a verticillate Plant, with a labiated Flower, conſiſting of one Leaf, whoſe upper Lip or Creſt is cut into two Parts, and turns up backwards, with crooked Stamina, or Chives; but the under Lip, or Beard, is divided into three Parts, the middle Segment being hollow, like a Spoon; out of the two or three teeth'd Flower-Cup riſes the Pointal, attended as it were by four Embryos, which afterwards turn to ſo many Seeds, that are roundiſh, and are incloſed in the Flower-Cup.

Boerhaave mentions ſix Species of *Roſmarinus*, which are;

1. Roſmarinus; hortenſis; anguſtiore folio. *C. B. P.* 217. *Tourn. Inſt.* 195. *Boerh. Ind. A.* 179. *Roſmarinus*, Offic. *Roſmarinum coronarium*, Ger. 1109. Emac. 1292. *Libanotis coronaria, ſive Roſmarinum vulgare*, Park. Theat. 71. ROSEMARY.

This is a Plant very well known, growing almoſt in every Garden. It grows larger and more woody in *England* than in many other Countries, having woody tough Branches, with long narrow thick Leaves, that are hoary and ſomewhat hollow underneath, and green above; among theſe grow the Flowers ſeveral together in Cluſters, of a pale purple Colour, each having a large Galea, and is ſet in a thick, hoary, five-corner'd Calyx, at the Bottom of which lie four round Seeds. It grows wild in *Spain*, and the Southern Parts of *France*; but with us is planted in Gardens, and flowers in *April*. The Leaves and Flowers are uſed.

Roſemary is a Plant of great Service in Affections of the Head and Nerves, helping the Apoplexy, Palſy, and all Kinds of Convulſions, Pains, and Dizzineſs of the Head. It ſtrengthens the Sight and Memory, and opens Obſtructions of the Liver and Spleen. The dried Herb burnt is good to ſweeten the Air, and correct noxious filthy Smells.

Officinal Preparations are the *Conſerva Anthos, Aqua Reginæ Hungariæ*, and the Chymical Oil and fixed Salt. *Miller's Bot. Off.*

Roſemary, with reſpect to its Virtues, bears a great Affinity to Spike and Lavender; and as it abounds with a penetrating balſamic Oil, its Spirit proves equally efficacious in Diſorders of the Head, with Spirit of Lavander. An Infuſion

of Roſemary in Water or Wine, is highly beneficial in the *Fluor albus*, and Sterility proceeding from it, in Hoarſeneſs, in Aſthma's and a diſagreeable Breath. *Arnaldus de Villa Nova* affirms, that he has often ſeen Cancers, Gangrenes, and Fiſtulas dried up and perfectly cured, tho' they would yield to no other Medicines, by frequently waſhing them with an Infuſion of Roſemary in Spirit of Wine. *Hoffman de Præſt. Remed. Domeſt.*

AQUA HUNGARICA.
Hungary, or the Queen of Hungary's Water.

Take of Flowers of Roſemary, twenty Ounces; rectified Spirit of Wine, thirty Ounces; let them infuſe for ſome Days, then draw off as much as there was Spirit put in.

This is moſt conveniently made by the Copper Alembic, taking Care that the Receiver is cloſed with a Bladder to the end of the Worm. And this Way common Spirit may be as well uſed as the rectified, obſerving not to draw it ſo low as to be cloudy; for after a certain Standard, the oily Part of the Flowers, which is conſiderable, will turn it milky. What runs afterwards, as a great deal will, which yet ſmells and taſtes ſtrong of the Flowers, may either be kept to throw into the Still again, when the ſame is to be made, or uſed in the Shop for a ſmall Spirit of Roſemary; and the laſt Runnings of all may paſs for a good ſimple Water, under the ſame Title. The College have rejected this out of their new Diſpenſatory; and indeed what is imported from *France*, and Countries where the Roſemary moſt abounds, is ſo good and cheap that it is hardly worth any Body's while to make it here, unleſs the Wholeſale Dealers: For theſe Gentlemen can in an Inſtant brew the largeſt Quantity, at a very ſmall Expence. Their Way is, to impregnate rectified Spirit of Wine with chymical Oil of Roſemary and that of Lavender, and this, with a *French* Title, they palm upon the Nation for *right French Hungary Water.*

CONSERVA ANTHOS. *Conſerve of Roſemary. Flowers.* See CONSERVA.

For the chemical Oil of Roſemary, ſee OLEUM.

For the fixed Salt, ſee SAL.

2. Roſmarinus; ſtriatus; ſive aureus. *Park. Theat.* 74.

3. Roſmarinus; hortenſis; anguſtiore folio; argenteus. *H. R. Par.* 158.

4. Roſmarinus; ſpontaneus, folio eleganter variegato. *H. R. D.*

5. Roſmarinus; ſpontaneus; ſive latifolius. *C. B. P.* 217.

6. Roſmarinus; ſpontaneus; ſive latifolius, folio Apice inhamum curvato. *Boerh. Ind. Alt. Plant. Vol.* 1.

Roſemary Leaves are antihyſteric, uterine, emmenagogue and cephalic; when uſed in Fomentations and Cataplaſms, they are of an alleviating and detergent Nature. Roſemary, in conſequence of its heating and diſſipating Quality, is an excellent Remedy in a *Fluor albus* ariſing from Languor. The Leaves bruiſed, made up in Form of a Paſte, and ſwallowed, powerfully ſtrengthen the Stomach and rouſe the Spirits. This Plant is an excellent Medicine in Diſorders of the Head and Nerves, ſuch as a Vertigo, a Carus, an Epilepſy, a Palſey, a Cholic, hyſteric Fits, and Weakneſs of Memory. Its Leaves, when put in a Bath, are excellent againſt Barrenneſs, render the Sight clear, remove a diſagreeable Breath and Difficulty of Breathing, and reſolve Obſtructions of the Liver and Spleen, for which Reaſon they are highly beneficial in the Jaundice; externally they contribute to ſtrengthen the Nerves, prevent Gangrenes, and reſolve cold Humours. In Catarrhs, and the Diſorders ariſing from it, the Smell of this Plant is beneficial; Roſemary is produced in *England*, *Spain*, and ſome Parts of *France*. Its Leaves ſmell like Camphire; and from its Flowers are obtained a Spirit, an Oil, and a Quinteſſence. The Water diſtilled from its Flowers is, *The Queen of Hungary's Water*, ſo called becauſe a certain Hermit taught its Compoſition to that Queen. This Water is excellent in *Deliquiums*, and what we call a Sinking of the Spirits. Melancholic and hyſteric Patients are greatly relieved and exhilerated by the grateful Smell of this Water, which is, alſo, excellent for thoſe who faint upon ſeeing the Blood ſpring from an opened Vein; for it excellently revives the Spirits, when applied to the Noſe, an Organ of all others the moſt eaſily affected. In the ſame Caſe, it is taken internally in Rain or Spring Water, and externally the Temples, Noſtrils, and nervous or muſcular Parts, are to be rubb'd with this Water. In Contuſions, Wounds, Tooth-achs, Gangrenes, and Congeſtions of cold Humours, this Water is uſed with great Succeſs. Of Roſemary Flowers, gathered in the Middle of the Day, bruiſed with Sugar, and afterwards preſerved from the Air in a Galley-pot, is made the celebrated Engliſh Conſerve, known in the Shops by the Name of *Conſerva Florum Anthos*. This Conſerve is an excellent Remedy in Vertigos, ariſing

arising from a cold Cause, as also in cold Distempers. Hence 'tis an excellent Stomachic, and proper in that Disorder of the Eyes called *Lenia Lippea*, when not proceeding from an Inflammation. The Leaves of Rosemary, boiled in Wine, strengthen the Nerves. A Conserve is also made of its Leaves for the Use of the Poor. The Oil obtained from the Flowers and Leaves of this Plant is cephalic, anti-scorbutic, emmenagogue, and in Virtues greatly approaches to the Savin. It is an excellent Medicine in Epilepsies, cures the various Symtoms of the hysteric Passion, and promotes a Discharge of the Lochia and Menses; for when the Fœtus or Menses are retained, 'tis customary among the Women to exhibit some Drops of this Oil in Wine. *Hist. Plant. Ascript. Boerhaav.*

ROSMARUS. The Sea-Cow. See MANATI.

ROSANIA or ROSALIA. The same as ROSEOLÆ.

ROS SOLIS.

The Characters are;

The Leaves are thick set with bristly Hairs distilling Drops. The End of the Pedicle becomes an oblong tubulated Calyx, divided into five acute Segments, within which is seated a rosaceous pentapetalous Flower, furnished with five Stamina. The Ovary from the Center of the Calyx, within the Flower, is of a conic, accuminated Figure, gaping when mature, and full of a Multitude of Seeds.

Boerhaave mentions two Sorts of *Ros Solis*, which are;

1. Ros Solis; folio subrotundo. *C. B. P.* 357. *Raii Hist.* 2. 1100. *Synop.* 3. 356. *Tourn. Inst.* 245. *Boerh. Ind. A.* 216. *Ger. Emac.* 1556. *Ros Solis*, Offic. J. B. 3. 761. *Ros Solis major*, Ger. 1366. *Ros Solis sive Rorella vel Rosa Solis*, Park. Theat. 1052. *Ros Solis, Rosa Solis, Sponsa Solis, Rorida & Rorella etiam dicta.* Chab. 559. ROSA SOLIS.

This is a small low Plant, having a little fibrous Root, from which spring small round hollowish Leaves, on Footstalks of about an Inch in Length, covered and fringed with short red Hairs or Bristles, which make the whole Leaf appear red; from among these arise naked Stalks three or four Inches high, having several small five-leav'd Flowers on the Top, standing one Way, which are succeeded by little longish Seed Vessels, containing very small Seed; it grows in boggy Grounds, and flowers in *June* and *July*.

Rosa Solis is commended by some as a great Cordial, and good for Consumptions, Convulsions, and the Plague. Formerly a cordial Water, in which this Herb, with several Spices, was a principal Ingredient, was in great Repute, under the Name of *Rosa Solis*, tho' now almost out of Date. *Miller's Bot. Off.*

Some Authors affirm it is a Caustic, and improper for internal Use.

2. Ros Solis: folio oblongo. *C. B. P.* 357. *Boerh. Ind. Alt. Plant. Vol.* I.

ROS SYRIACUS. The same as ELÆOMELI; which see.

ROSTRIFORMIS. The same as CORACOIDES.

ROSTRUM. The Beak of a Bird. Hence several Chirurgical Instruments are, from their Similitude, called by this Name. Thus there is the *Rostrum Corvi*, the Crows Bill Forceps; the *Rostrum Gruis*, Crane's Bill; the *Rostrum Psittacinum*, Parrot's Bill; and the *Rostrum Vulturis*, Vulture's Bill. *Rostrum Leporinum*, is a Hare Lip.

ROTANG. The Name of a Species of Reed mentioned by *Piso*.

ROTATORES. The Trochanters. See TROCHANTERES. The Alchymists are called *Rotatores* by Way of Derision.

ROTILA, in *Paracelsus*, is the same as RUBRICA.

ROTULA. The *Patella*, or Cap of the Knee. In Pharmacy, *Rotula* is a Troche.

ROTUMHA. A Vessel like a Cucurbit. *Rulandus.*

ROTUNDUS MAJOR. The Name of a Muscle of the Shoulder. See TERES MAJOR.

ROTUNDUS MINOR. See TERES MINOR.

ROUCOU. See ACHIOTL.

RUB, in *Rulandus*, is the same as RON.

RUBEA ICTERITIA, in *Paracelsus*, is an Erysipelas.

RUBECULA. Offic. Jonst. de Avib. 87. Mer. 178. Bellon. des Oyse. 349. Gesn. de Avib. 681. Charlt. Exer. 97. *Erithacus sive Rubecula*, Aldrov. Ornith. 2. 742. *Rubecula sive Erithacus*, Raii Ornith. 219. Ejusd. Synop. A. 78. THE ROBIN-RED-BREAST, or RUDDOCK.

This Bird, when eaten, is by some esteemed to excite Venereal Inclinations.

RUBEFACIENTIA. Topics which excite a Redness of the Skin; the same as PHÆNIGMI.

RUBELLA. This is defined by *Dornæus*, a spiritual Essence, extracting a Tincture from Bodies by its resolutive Power.

RUBELLIANÆ. The Berries of the white Bryony. *Rhodius in Scribon. Larg.* N°. 249.

RUBELLIO. The Sea-Roach.

This Fish has two sharp Fins on the Back, and feeds upon small Crabs and other little Fishes; it is more esteemed in Winter than in Summer; and this may be occasioned by its different Way of feeding in these two Seasons; for in Winter it keeps in the open Sea, but in Summer it draws near the Shore; or, according to some Authors, the Difference may arise from its spawning in the Summer.

This Roach is easy of Digestion, because 'tis tender, delicate, not very compact in its Parts, and has but little gross Juice. It is nourishing, restorative, and promotes the *Semen*, by Reason of the balsamic, oily Parts, and volatile Salts with which it abounds. It is, also, reckoned good for stopping a Looseness; operating on this Occasion, by calming and suppressing the sharp and pungent Humours, which cause this Inconvenience, by its oily Principles. It agrees, especially in Winter, with any Age and Constitution. *Lemery on Foods.*

RUBEOLA.

The Characters are;

The Leaves grow four, or more together; the Flower is monopetalous, Funnel shap'd, and quadrifid, resting upon one, or a double Ovary; the Ovary becomes a Fruit containing two Seeds.

Boerhaave mentions two Species of *Rubeola*, which are;

1. Rubeola; latiore folio. *T.* 130. *Rubia, latifolia, spicata.* C. B. P. 334. *Pseudo-Rubia, latifolia, spicata*, M. H. 3. 333.

2. Rubeola; angustiore folio. *T.* 130. *Pseudo-Rubia, spicata, angustifolia.* M. H. 3. 333. *Boerh. Ind. Alt. Plant. Vol.* I.

This Plant is recommended in a Quinsey. *Hist. Plant. Boerh. Ascript.*

RUBETA. The Toad. See BUFO.

RUBIA.

The Characters are;

The Leaves are rough; the Fruit consists of two succulent Berries, which contain each an umbilicated Seed.

Boerhaave mentions four Sorts of *Rubia*, which are;

1. Rubia; Tinctorum; sativa, *C. B. P.* 333. *Boerh. Ind. A.* 147. *Tourn. Inst.* 114. *Rubia Tinctorum*, Offic. Ger. 957. Emac. 1118. Raii Hist. 1. 480. Synop. 3. 223. *Rubia sativa*, J. B. 3. 714. *Rubia major sive hortensis*, Park. Theat. 274. MADDER.

The Roots of Madder are about as thick as a large Goose-Quill, round and much branched, of a reddish Colour, clear, and somewhat transparent, having a small, slender, hard, tough String in the Middle, of a sweetish Taste, with a little Bitterness; from these spring many square, rough, weak Stalks, full of Joints, about which are set five or six long sharp-pointed Leaves, that are broadest in the Middle, and narrow at both Ends, rough almost to Prickliness. The Flowers grow in long Spikes, coming forth at the Joints with the Leaves, small and yellow, of one Leaf cut into four Segments, each succeeded by two small, moist, blackish Berries, containing two round umbilicated Seeds. It is planted in Fields and Gardens, and flowers in *May*.

The Roots of Madder are opening and attenuating, good for Obstructions of the Liver, help the Jaundice and Dropsy, and cleanse the Kidneys of tough and slimy Humours, and are of Use against the Stone and Strangury. They are accounted good to dissolve congealed Blood, and to be serviceable in Wounds and Contusions. A great Quantity of the dried Roots are used by the Dyers to dye a red Colour. *Miller's Bot. Off.*

2. Rubia; sylvestris, aspera; quæ Sylvestris Dioscoridi. *C. B. P.* 333. *Raii Hist.* 1. 480. *Synop.* 3. 223. *Boerh. Ind. A.* 147. *Rubia sylvestris & Rubeola.* Offic. *Rubia sylvestris*, Park. Theat. 274. WILD MADDER.

It grows wild in Hedges. The Root agrees in Virtues with the *Rubia Tinctorum Sativa.*

3. Rubia; sylvestris; Monspessulana; major. *J. B.* 3. 715.

4. Rubia; quadrifolia; asperrima; lucida; peregrina. *Boerh. Ind. Alt. Plant. Vol.* I.

RUBIA SYNANCHICA, Offic. *Rubia Cynanchica*, C. B. P. 333. J. B. 3. 723. Raii Hist. 1. 485. *Rubeola vulgaris quadrifolia, lævis, floribus purpurascentibus*, Tourn. Inst. 130. Raii Synop. 3. 225. *Synanchica Lugdunensis*, Ger. Emac. 1120. *Asperula repens Gesneri, seu saxifraga altera Cæsalpini*, Park. Theat. 453. SQUINANCY-WORT.

It has a black, thick, woody Root, which runs to a great Depth in the Earth, and is furnished with very numerous fine capillary Fibrils, divided into a Multitude of Heads, and shoots up many smooth, slender angulous Stalks, a Span in Length or more, clothed at the Joints, which are frequent near the Head of the Root, with four Leaves, very short and broad, so as that the Length is scarce the third Part of the

R U B

the Breadth. About the Middle of the Stalk the Joints are frequent, and the Leaves longer, narrower, ſharper, and grow alſo by Fours. The Flowers on the Tops of the Stalks and Branches, form a kind of Umbellas, as in the *Valeriana*, and are expanded from an oblong Tube into four Segments, of a beautiful red Colour, and a pleaſant Smell; ſometimes they are white like thoſe of the *Jaſminum*, which they reſemble in Colour and Smell, but are of the Size of the *Rha* of *Dioſcorides*.

Theſe are ſucceeded by a Coacervation of Seeds, which grow two together, and are rugous or rough, oblong, and bear like thoſe of the *Phaſeolus*, double the Size of thoſe of the common *Gallium*, and when dry of a yellowiſh Colour.

It abounds in barren Places, and chalky and ſunny Hills, as on *Gogmagog Hills*, *Suſſex Downs*, and the like Situations.

It is ſuppoſed to be of extraordinary Efficacy in the *Squinancy*, (whence its Name) a Quinſey, whether inwardly or outwardly uſed. *Dale.*

RUBICILLA Offic. Mer. Pin. 176. Schw. A. 346. *Rubicilla*, *Pyrrhula*, Charlt. Exer. 17. *Rubicilla ſeu Pyrrhula*, Geſn. de Avib. 664. Will. Omith. 180. Raii Omith. 247. Ejuſd. Synop. A. 86. *Pyrrhula ſeu Rubicilla*, Aldrov. Ornith. 2. 744. Ions. de Avib. 87. *Rubecula*, Bellon. des Oyſe. 349. *Byrriola*, Scaliger. THE BULL-FINCH, ALP, or NOPE.

The Fleſh of this Bird is recommended againſt the Cholic.

RUBIFICANTIA. The ſame as RUBEFACIENTIA.

RUBIGO. The Ruſt of Metals, or Mildew; or Smut of Corn.

RUBINUS. See CARBUNCULUS.

RUBRICA FABRILIS. Offic. Mer. Pin. 218. Matth. 1359. Calc. Muſ. 134. Dougl. Ind. 80. *Rubrica*, Charlt. Foſſ. 2. Worm. 4. Aldrov. Muſ. Metall. 257. *Rubrica Fabrilis Mollis*, Kentm. 8. RED OKER, RUDDLE, MARKING STONE.

This is an earthy, ponderous, and intenſely red Subſtance, found in many Parts of *England*, and is uſed in vulnerary and drying Plaiſters.

RUBRICA SINOPICA. Offic. Matth. 1354. *Rubrica Sinopis* Agricol. 583. *Terra Sinopiana*. Tourn. Voy. Ed. Lond. 2. 159. EARTH OF SINOPE.

This ought to be thick, heavy, and all of one Colour, reſembling Liver; and when diluted with Water, it ought to diffuſe itſelf therein.

It is dug out of the Earth in *Cappadocia*, is eſteemed drying, and is ſaid to reſtrain a Diarrhæa.

RUBUS.

The Characters are;

The Calyx is quinquifid; the Flower is roſaceous, pentapetalous, and furniſhed with a great Number of Stamina; the Placenta is in the Centre of the Calyx, to which it grows; the Fruit is round, and compos'd of a great Number of ſucculent *Acini*, fixed to the *Placenta*, and furniſhed with oblong Seeds, each being furniſhed with a long Tube.

Boerhaave mentions ſeven Species of *Rubus*, which are;

1. Rubus vulgaris; ſive Rubus fructu nigro. *C. B. P.* 479. *Tourn. Inſt.* 614. *Boerh. Ind. A.* 2. 60. *Rubus vulgaris*, Offic. *Rubus*, Ger. 1089. Emac. 1272. *Rubus vulgaris major*, Park. Theat. 1013. *Rubus major fructu nigro*, J. B. 2. 57. Raii Hiſt. 2. 1639. Synop. 3. 467. THE BRAMBLE OR BLACK BERRY BUSH.

The Bramble has many long, creeping, angular, tough Branches, beſet with a Multitude of very ſharp crooked Thorns. The Leaves grow on the younger Twigs, uſually five on one Foot Stalk in the lower Parts, and three on the upper Part next the Flowers, which grow in Cluſters at the End of the Branches, conſiſting of five Leaves a-piece, in ſome Plants white, in others of a pale Red, with ſeveral Stamina in the Middle. The Fruit is a Cluſter of *Acini*, green at firſt, then red, and when ripe, of a black Colour, and of a pleaſant ſweet Taſte. It grows every where in the Hedges, flowering in *June* and *July*, and the Fruit is ripe at the latter End of *Auguſt* and in *September*. The Leaves and Fruit are uſed.

The Leaves are accounted Reſtringent, and are frequently preſcribed in Gargariſms for ſore Mouths and Throats; the unripe Fruit is very binding and reſtringent, uſeful for all Kinds of Fluxes and Bleeding; for Thruſhes and ſore Mouths. The Juice of the ripe Fruit made into Syrup, is accounted good againſt Heat of Urine. *Miller's Bot. Off.*

The Leaves of the Bramble are ſtyptic, and of an earthy Taſte; they ſtain the blue Paper with a deep red; the Fruit gives it a much deeper, and almoſt as deep as Alum; this Fruit is vinous, and of a very good Smell upon ſome Brambles, and inſipid and diſagreeable upon others. It is very probable that the acid Part of the natural Salt of the Earth, which in the Leaves is very little diſengaged from the other Principles, is almoſt entirely freed from them in the Fruits, and produces there, with the terreſtrial Parts, a Salt which reſembles Alum; ſo that the Antients had a great deal of Reaſon to uſe the Fruit of this Plant to bind. The Bramble is aſtringent, deterſive and abſorbent; the Decoction of its Branches, as *Dioſcorides* affirms, ſtops a Looſeneſs and the Fluor albus. Its Leaves, chew'd, clear the Ulcers of the Gums and Mouth; bruis'd and applied to the Tetters they kill them, and cure the Piles. The Juice of the young Shoots thickened in the Sun, acts more powerfully. *Galen* was of the ſame Opinion; he made Uſe of the Leaves for Wounds; of the Flower and Fruit for ſpitting Blood, and of the Root for the Stone. *Pliny* has ſtollen out of *Dioſcorides* what he has ſaid of the Bramble; but he adds to the Virtues of this Plant that of being diuretic. This Plant is now uſed to cleanſe and bind, taken either outwardly or inwardly. The Decoction of it is uſed for the Wounds of the Legs. *Tabernæmontanus* ſays, that a Bolſter dipped in the Juice of the Bramble, and put into the Fundament, will ſtop the Flux of the Piles. Mr. *Ray* relates, that Dr. *Needham* ſet a great Value upon the Syrup of Black-berries for the Heat of Urine. A ſimple *Diamoron* may be prepared of it for the Diſeaſes of the Throat. The Juice of the Bramble is an Ingredient in the *Diamoron Nilai uſitatum*. The Gun-powder made of the Coals of this Plant is quicker and ſtronger than the common Sort. *Martyn's Tournefort.*

2. Rubus; repens fructu cæſio. *C. B. P.* 479. *Tourn. Inſt.* 614. *Boerh. Ind. A.* 2. 60. *Ger. Emac.* 1271. *Chamæbatos* Offic. *Rubus minor Chamærubus ſive Humirubus*, Park. Theat. 1013. *Chamærubus ſpinoſus fructu cæruleo.* Jonſ. Dendr. 272. *Rubus minor fructu cæruleo*, J. B. 2. 59. Raii Hiſt. 2. 1640. Synop. 3. 467. THE DEW BERRY.

It is found amongſt the Corn. It flowers in *May*. The Fruit becomes ripe in *Autumn*. The Fruit is in Uſe. It agrees in Virtues with the *Rubus vulgaris*, or the Bramble or Black-berry Buſh. *Dale.*

3. Rubus; Idæus; ſpinoſus; fructu albo. *C. B. P.* 479. *J. B.* 2. 59.

4. Rubus; Idæus; ſpinoſus; fructu rubro. *J. B.* 2. 59. *Raii Hiſt.* 2. 1640. *Synop.* 3. 467. *Boerh. Ind. A.* 2. 69. *Rubus Idæus*, Offic. Ger. 1089. Emac. 1272. Park. Theat. 557. *Rubus Idæus ſpinoſus*, C. B. P. 479. Tourn. Inſt. 614. THE RASPBERRY-BUSH.

The Raſpberry-Buſh has ſlender brittle Stalks, covered with an aſh-colour'd Bark, beſet with ſmall weak Prickles; it has five high-vein'd, oblong, ſharp-pointed Leaves, growing upon one Foot-ſtalk, white underneath and green above, indented about the Edges. The Flowers conſiſt of five Leaves, of a white Colour, with a Caſt of Red; each of which is ſucceeded by a roundiſh Fruit made of a Cluſter of Acini, for the moſt part red, but in ſome Plants they are of a white Colour. It grows wild in ſome Parts of *Wales*, and the North of *England*; and flowers in *May*, and the Fruit is ripe in *June*.

The Fruit, which is the only Part uſed, has a pleaſant grateful Smell and Taſte, is cordial, and ſtrengthens the Stomach, ſtays Vomiting, is ſomewhat reſtringent, and accounted good to prevent Miſcarriage.

The only Officinal Preparation is the *Syrupus de Rubo Idæo*. *Miller's Bot. Off.*

They make a Wine, a Syrup, a Ratafia, and a Vinegar, of the Fruits of this Plant. Spirituous Water is alſo drawn from them. Theſe Preparations are ſtrengthening, and good in malignant Fevers and the Small-Pox. Nitre diſſolved, and chryſtallized with the Juice of Raſpberries, is very agreeable. *Martyn's Tournefort.*

The red Raſpberry is more common than the white; ſuch as are large, full of ſweet and vinous Juice, and pleaſant to the Taſte and Smell, are the beſt.

They are of a moiſtening and cooling Nature, cordial, and fortify the Stomach; they ſweeten the Breath, purify the Blood, and are reckoned to be antiſcorbutic and antinephritic.

Their refreſhing Taſte and Smell proceed from their eſſential Salt, intermixed with ſome oily Parts a little refined, which lightly pricking the Nerves of the Taſte and Smell, excite an agreeable Senſation in them. They have nearly the ſame Principles, and conſequently the ſame Effects as Strawberries; but they are moiſter and more phlegmatic, and not ſo compact in their Parts; for which reaſon they eaſily corrupt in the Stomach, if they continue there too long. The Flowers are uſed againſt the St. *Anthony's* Fire and Inflammations of the Eyes.

Raſpberries are proper in warm Weather, and ſuit young bilious People, and thoſe whoſe Humours are too ſharp, and over-much agitated. *Lemery on Foods.*

5. Rubus; odoratus. *Cornuti*, 158.

6. Rubus; flore albo, pleno. *H. R. Monſp.*

7. Rubus; Alpinus; humilis. *J. B.* 2. 61. *Tourn. Inſt.* 615.

615. *Boerh. Ind. A.* 2. 60. *Chamærubus*, Offic. *Chamærubus Saxatilis*, C. B. Pin. 479. Raii Hiſt. 1. 654. Synop. 3. 261. *Rubus Saxatilis*, Ger. 1090. Emac. 1273. *Rubus Alpinus Saxatilis*, Park. Theat. 1014. STONE-BRAMBLE.

It grows on high Mountains, flowers in *June*, and the Berries have the ſame Virtues with Raſpberries.

All theſe Species of the *Rubus* are received in Medicine; the Roots of the firſt, ſecond, third and fourth Species, digged up in *February* or *March*, about the Full Moon, and boiled in Honey, are a very good aperient Medicine, whence it is proper for a Dropſy. The Fruit boiled in Red Wine, was accounted by the Ancients a ſovereign Remedy, where the Caſe required Strengthening, and for the Hæmorrhages, and Fluxes of the Belly. The ripe Berries are full of a nitrous and aromatic Juice, which is highly aperitive, reſolves dry and harden'd Coagulations, and expels them by Urine, and is on that account very ſerviceable in Diſeaſes, which require laxative and lenient Remedies, and ſuch as are endowed with a ſaponaceous Quality. The Leaves, which way ſoever prepared, are corroborative and aſtringent; the Fruit is laxative and aperient, and the expreſſed Juice of the Leaves is of Uſe in all acute Diſeaſes. Hence the *Syrupus de Rubis*, or *de Rubo Idæo*, is very good in all Diſorders proceeding from Bile, and Inflammations. A few Berries of the fourth and fifth Species, put into Wine, communicate to it a fine Colour and Fragrancy, and greatly exhilerate the Heart. They call this Wine *Ruboides*. Of the ſame they prepare a Jelly, which is commended for hot Diſtempers. The Leaves and Fruit are commended in a Diarrhæa, Fluor Albus, Vomiting, and immoderate Fluxes of the Uterus and Noſtrils; they cure Ulcers of the Gums, and are an excellent Remedy for the Aphthæ and Ulcerations of the Mouth. The bruiſed Leaves extirpate Warts, cure Wounds and Ulcers, and remove the Itch. *Hiſt. Plant. aſcript. Boerhaave.*

RUCMA, or LUCMA. *De Laet.* An *American* Fruit, ſomewhat like an Orange with reſpect to Size and Shape. It is not eſteemed a good Food, nor is it uſed in Medicine.

RUCTUS, or RUCTATIO. An Eructation, or diſcharging of Wind upwards.

RUELLIA.

The Characters are;

It hath a funnel-ſhaped Flower, conſiſting of one Leaf, which is cut into ſeveral Parts at the Brim, from whoſe Empalement ariſes the Pointal, which is fixed like a Nail in the Bottom of the Flower, and afterwards becomes a membranaceous Pod, which opens into ſeveral Parts, and is filled with ſmall Seeds.

Miller mentions three Species, which are;

1. *Ruellia*; *Americana*; *humilis*; *Aſphodeli Radice.* Plum. Nov. Gen.

2. *Ruellia*; *Carolinana*; *foliis oblongis anguſtis, flore purpureo.* Houſt.

3. *Ruellia*; *Americana*; *humilis, parvo flore cæruleo, capſulis teretibus.* Houſt.

The firſt Sort was diſcovered by Father *Plumier* in *America*, who gave this Name to the Genus in Honour of Dr. *Ruellius*, a Perſon learned in Natural Hiſtory, who flouriſhed in the Sixteenth Century. The ſecond Sort grows plentifully in *South-Carolina*, from whence it was brought into the *Engliſh* Gardens. This Sort grows much taller than the other two. The third Sort was diſcovered by the late Dr. *William Houſton* in *Jamaica*, who ſent the Seeds into *England*. The Flowers of this Kind are much ſmaller than thoſe of the other Sorts, and are of ſhort Duration, ſeldom continuing above one Day. *Miller*'s *Dictionary.*

RUFUS EPHESIUS, or RUFFUS EPHESIUS. This ancient Phyſician lived under the Emperor *Trajan*, and was eſteemed by *Galen* one of the moſt ſkilful of his Profeſſion. The ſame Author tells us, that *Rufus* wrote of the *Materia Medica* in Verſe; he alſo wrote a Treatiſe of the *Atra Bilis*, and ſome others cited by *Suidas*, but now loſt; and we have nothing left of his Works, but a ſmall Treatiſe of the *Greek* Names of the different Parts of the Body, and another of the Diſeaſes of the Kidneys and Bladder, with a Fragment of a Treatiſe of Cathartic Medicines. His principal Scope in the firſt of theſe Works, was to give a general Idea of Anatomy, and in particular to prevent the Miſtakes of his Cotemporaries, who ſtudied Medicine in reading ancient Authors, ſome of whom had diſtinguiſhed certain Parts of the Body by Names different from thoſe given them by others. Beſides this, we may infer from what *Rufus* ſays in this Book, that Anatomic Operations, in his Time, were only exerciſed upon Beaſts. "Chuſe, ſays he, an Animal the moſt like Man that can be, "you will not find all the Parts in every Reſpect reſembling "thoſe of the Human Body; but they will, however, have "at leaſt ſome Relation one to another. Formerly, he adds, "Anatomical Demonſtrations were made upon human Bo- "dies." We learn alſo from the ſame Book, that the Nerves, which were afterwards called *recurrent*, were then newly diſcovered. "The Ancients, ſays *Rufus*, called the Arteries of "the Neck *Carotides*, or *Carotics*; as much as to ſay, *ſopo-* "*rific*, becauſe they believed, that by a ſtrong Compreſſion "of theſe Arteries the Animal was laid aſleep, and loſt his "Voice; but it has been diſcovered in the preſent Age that "ſuch an Accident proceeds not from a Compreſſion of thoſe "Arteries, but from that of the Nerves contiguous to them." This Phyſician ſeems alſo to have ſeen certain Veſſels of the Matrix, of which Anatomiſts before him had made no mention. "*Herophilus*, ſays he, believed that Women had "nothing of varicoſe Paraſtatæ, but we have found, by exa- "mining the Matrix of a Brute, certain Veſſels which ariſe "from the Teſticles, and being reflexed on both Sides in the "Form of Varices, proceed to terminate in the Cavity of the "Matrix. They alſo yield a glutinous Humour when preſſed, "and it is undoubtedly believed that they are ſeminal Veſſels of "that Kind which they call *varicoſe*." *Rufus* had before obſerved, that there are four ſpermatic Veſſels in Man, two varicous, and two glandulous; and that the Extremity of the firſt, which joins to the Teſticles, went by the Name of *Paraſtatæ*. The little Treatiſe of the Diſeaſes of the Kidneys and Bladder contains nothing particular. *Rufus* alſo wrote ſome Commentaries upon *Hippocrates*.

The Three Books of *Rufus Epheſius*, of the Names of the Parts of the Human Body, were publiſhed in *Greek* by *Jac. Goupylus*, at *Paris*, 1554, in Octavo, *Typis Regiis, ex Officina A. Turnebi.* They had been tranſlated, together with *Aretæus*, into *Latin*, by *Junius Paulus Craſſus*, and printed at *Venice*, 1552, in Quarto, and were reviſed by the ſame *Goupylus*, and reprinted at *Paris*, 1554, in a ſmaller Size; and again, among the *Medici Principes* of *Hen. Stephanus*, 1567, in Folio. They were alſo reviſed a ſecond time by *Craſſus*, and reprinted at *Venice*, 1555, and at *Baſil*, 1581, in Quarto.

His Book of the *Diſeaſes of the Kidneys and Bladder*, with his Fragment of *Cathartic Medicines*, were publiſhed in *Greek* with the other three Books of *Rufus* abovementioned, and *Soranus de Utero & Muliebri Pudendo*, by the ſame *Goupylus*, at *Paris, ex Officina Turnebi*, 1554, in Octavo, and printed the ſame Year in *Latin* in a leſſer Size; and were afterwards reprinted in *Latin* among the *Medicæ Artis Principes* of *Hen. Stephanus*, 1567, Folio.

A new Edition of *Rufus* in *Greek* and *Latin*, reviſed and compared with the *Bern* Manuſcript, was deſigned by *Martinus Bogdanus*, as we are told by *Bartholinus, Cent.* 4. *Medic. Epiſt.*

Labbeus, Bibl. nov. Manuſcript. mentions *Rufus de Venereis, & de Oſſibus*; and *Rhaſis* aſcribes to *Rufus* the Books περὶ ὑγιείας, "Of Health," which are found among the Writings of *Galen.*

Works of *Rufus* which are loſt, are five Books, περὶ διαίτης, "Of Diet," mentioned by *Suidas*, and the ſecond of them quoted by *Oribaſius*. Four Books, περὶ βοτανῶν, "Of Herbs," in Hexameter Verſes, mentioned by *Galen, Præf. Lib.* 6. *de Simp. Med.* who ſeems alſo to quote ſome of them. *Galen* in the Place juſt mentioned, quotes alſo the θεραπευτικὰ βιβλία, "Books of Therapeutics;" whence moſt of the Fragments of *Rufus*, which we find in *Aëtius*, ſeem to be taken. *Galen* alſo commends a Treatiſe of *Rufus* concerning Melancholy, or *Atra Bilis.*

Beſides theſe Works of *Rufus* mentioned by *Galen*, *Suida* takes notice of his Treatiſe of the *Diet of Corpulent Perſons*, of another on *Vulnerary Medicines*; and a Treatiſe of *Fleſhy Tumors or Exreſcences*; another of *Ancient Medicine*; and a Treatiſe of *Milk, Wine, and Honey.* There was another *Rufus*, called *Menius Rufus*, mentioned by *Galen, Lib.* 7. *de C. M. P. G. Fabricii Biblioth. T. G.* p. 102.

RUGA. A Wrinkle. The following Preſcription is an approved Coſmetic in Wrinkles of the Face. Boil Hartſhorn, not old, in Water, till it yield a Sort of Juice. Then ſtrain the Water, and with the ſame knead Bean-Meal, which afterwards reduce into Troches, and dry them in the Shade. When Occaſion requires, diſſolve a ſufficient Quantity of theſe Troches in Water, till it becomes of the Thickneſs of a liquid Cerate, with which anoint the Face, and when it is agglutinated, waſh it off with warm Water. *Ætius, Tetrab.* 2. *Serm.* 4. *Cap.* 4.

RUGITUS. A Murmuring of the Inteſtines; the ſame as BORBORYGMOS.

RUMA. The *Gula*, or the external Part of the Throat.

RUMEX. The ſame as ACETOSA.

RUMINANTIA ANIMALIA. Ruminating Animals, that is, thoſe who chew the Cud.

RUMPHAL. A Species of *Indian Arum*, called alſo IONOME. The Juice is poiſonous; but the Roots are recommended as an excellent Application to the recent Bites of Ser-

pents; but if the Wounds are not freſh, cut them open, and then apply the Roots. It is, farther, eſteemed an excellent Topic for Parts affected with the Venereal Diſeaſe.

RUPICAPRA. See CAPRA ALPINA.

RUPTORIUM. A Cauſtic uſed in Surgery for breaking or opening Abſceſſes.

RUSCUS.

The Characters are;

The Calyx is monophyllous, and multified, from the Middle of which proceed monopetalous, campaniform, and globous Flowers; the Ovary becomes a globous ſoft Fruit, filled with one or two Seeds, which are generally hard.

Boerhaave mentions four Sorts of *Ruſcus*, which are;

1. Ruſcus; anguſtifolius, fructu folio innaſcente. See BISLINGUA.

2. Ruſcus; latifolius; fructu folio inſidente. *Tourn. Inſt.* 79. *Boerh. Ind. A.* 2. 63. *C. B. P.* 305. *Laurus Alexandrina*, Offic. J. B. 1. 574. Raii Hiſt. 1. 663. *Alexandrina gemina*, Park. Theat. 700. *Hippogloſſum Matthioli*, Ger. 761. Emac. 909. LAUREL OF ALEXANDRIA.

The Root of this Bay is hard and knotty at the Head, ſending out ſeveral long Strings and ſmall Fibres; the Stalks are tough and limber, growing not to any great Height, having the Leaves ſet alternately upon them, which are hard, firm, and full of ſtraight Nerves, of an oval Shape, but ſharp-pointed at the End, about two Inches long; on the Middle of the Back-Part of each grows a ſmall moſſy green Flower, which is ſucceeded by a red Berry about as big as a Juniper-Berry. This Plant grows in the mountainous Parts of *Italy* and *Hungary*.

It is commended by *Dioſcorides* and *Galen* to open Obſtructions of the Kidneys and the Womb; to provoke Urine and the Menſes, and as helpful in long and hard Labour. It is alſo accounted a good vulnerary Plant, and uſeful to dry up old Ulcers and Sores; but is rarely uſed in our Days. *Miller's Bot. Off.*

3. Ruſcus; anguſtifolius; fructu ſummis ramulis innaſcente. *T.* 79. *Laurus Alexandrina, fructu longis pediculis caulibus alligato.* M. H. Bloeſ.

4. Ruſcus; myrtifolius; aculeatus. See BRUSCUS. *Boerh. Ind. Alt. Plant. Vol.* 2.

RUSMA. A Preparation of Honey which the *Turks* and *Tartars* uſe by way of *Dropax* or *Pſilothrum*. It is made by boiling Honey to the Conſiſtence of a Rob or Sapa.

RUSTICULA. The ſame as GALLINAGO. The Woodcock.

RUTA.

The Characters are;

The Leaves are divided into Segments; the Calyx is monophyllous, quadrifid, quinquefid, and ſtellated; the Flowers are roſaceous, tetrapetalous, and pentapetalous, furniſhed with eight or ten Stamina, four or five of which ariſe from the Unguis of the Petals, and four or five from the Interſtices of the Petals; the Ovary ſeated in the Bottom of the Calyx, becomes a roundiſh, quadrangular, or pentangular Fruit, conſiſting of as many Capſules, in which are contained kidney-ſhap'd or angular Seeds.

Boerhaave mentions ten Species of *Ruta*, which are;

1. Ruta; major; hortenſis; latifolia. *Boerh. Ind. A.* 260. *Ruta*, Offic. *Ruta hortenſis*, Ger. 1070. Emac. 1255. *Ruta hortenſis major*, Park. Theat. 132. *Ruta hortenſis latifolia*, C. B. P. 336. Tourn. Inſt. 257. *Ruta ſativa, vel hortenſis*, J. B. 3. 197. Raii Hiſt. 1. 874. GARDEN-RUE.

Rue is a ſhrubby Plant, whoſe elder Branches are tough and woody, having ſmooth blueiſh green Leaves, divided into an uncertain Number of ſmall oval Sections, which are ſomewhat thick and fat, and round-pointed at the End, abiding all Winter. The Flowers grow on the Top of the younger Shoots, conſiſting uſually of four yellow, hollow, ſcoop-like Leaves, torn in about the Edges, and having eight yellow Stamina, encompaſſing a roundiſh green Head, cut as it were into four Parts, growing large, and ſeemingly punched full of Holes, containing ſmall black rough Seed. The Root is woody, having many Fibres. Rue is planted in Gardens; the Leaves and Seeds are uſed; the whole Plant has a very ſtrong Scent.

Rue is a Plant of many Virtues, being alexipharmic, and good againſt infectious peſtilential Diſeaſes, and the Plague itſelf, and all Kinds of Fevers. It helps Diſorders of the Head, Nerves, and Womb, Convulſions and hyſteric Fits, the Colic and Weakneſs of the Stomach and Bowels; it reſiſts Poiſon, and cures the Bites of venomous Creatures, and mad Dogs. It is an Ingredient in the Compound-Water of Briony, and in Treacle-Water

Officinal Preparations are a ſimple Water, and a Conſerve of the Leaves, and an Oil by Decoction. *Miller's Bot. Off.*

That Rue was greatly eſteemed by the Ancients, is ſufficiently certain; ſince it was the principal Baſis of the Antidote of King *Mithridates*. Rue abounds with a highly acrid and penetrating Oil, capable of ſtimulating the languid Fibres to a briſker Motion, and conſequently imparting an additional Strength to them. The Leaves of Rue mixed with recent Butter, and eaten in the Morning with Rye-Bread, are beneficial to thoſe who abound in Phlegm, and an excellent Preſervative againſt the noxious Influences of a moiſt and vapid Atmoſphere, and the contagious Miaſmata of epidemical Diſorders. The Leaves bruiſed with Pepper, common Salt, and ſtrong Vinegar, and applied to the Arteries of the Carpus, provided the morbid Matter is before duly managed, excellently check the febrile Impetus, and are often uſed with more Efficacy and leſs Danger, in ſtopping obſtinate Quartan Fevers, than internal Aſtringents, and the ſo much celebrated *Peruvian* Bark. Strong Wine-Vinegar, richly impregnated with the Juice of Rue, when applied to the Mouth and Noſtrils, is not only an excellent Preſervative againſt the Contagion of epidemical Diſorders, but alſo more effectual in preventing Deliquiums, than all the cephalic, rich, balſamic and apoplectic Spirits. *Hoffman. de Præſtant. Remed. Domeſt.*

Rue is an Herb very much commended as an Alexipharmic, and is eſteemed one of the beſt Simples for Hyſterics, Epilepſy, Apoplexy, Convulſions, Peſtilence, Inflammations and Gangrenes; in which laſt Caſe, the Herb bruiſed and applied with Wine and Salt, quickens the dead Part, prevents a Suppuration, and effects a Cure. *Nicander* commends it againſt the Bites of all venomous Creatures. There is no better Herb in the Peſtilence; it has ſomething of an aromatic, acidiſh, fragrant and oily Quality, and is heating in a high Degree, with a kind of Acidity. The Smell revives Women under a Syncope, and raiſes them under hyſteric or epileptic Fits. It is of mighty Efficacy againſt Phlegm, and is very good, externally applied, for cold and pituitous Tumors; and it is highly celebrated for clearing and ſharpening the Sight. It has a very acrid but not burning Taſte, and abounds with a Salt, Oil, and a very penetrating Spirit, and is on that Account of ſingular Service in moving and ſtimulating the Nerves, and in attenuating groſs Humors, and expeling them by inſenſible Perſpiration and Sweat. It is an excellent Plant, as *Pliny* aſſures us, againſt all Sorts of Poiſon, and for all hyſteric Melancholy, and hypochondriac Diſorders, and for Faintings. It provokes the Menſes, and expels the Lochia, Fœtus, and Secundines; and drank in the Morning inſtead of Tea, and the Vapour received into the Eye, ſharpens the Sight. The Seed is much commended for the Worms, and the Gonorrhœa, and conſumes the Semen by its exceſſive Heat and Dryneſs. The Herb is of Service in the Small-Pox and Meaſles, the Epilepſy, lethargic Diſorders, and the flatulent Colic. Rue externally uſed is good for cold, humid and watry Tumors. A Cataplaſm is prepared of Rue bruiſed and boiled with Wine, which reſiſts an Inflammation. Rue may be given inwardly in the moſt acute Diſeaſes. *Hiſt. Plant. aſcript. Boerhaave.*

2. Ruta; hortenſis; latifolia; arbuſculæ ſimilis, *C. B. P.*

3. Ruta; Africana; maxima, *Catal. Schwerin.*

4. Ruta; Chalepenſis; tenuifolia; florum petalis villis ſcatentibus, *M. H.* 2. 508.

5. Ruta; Chalepenſis; latifolia.

6. Ruta; hortenſis; minor; tenuifolia, *M. H.* 2. 507.

7. Ruta; hortenſis; minor; tenuifolia; foliis variegatis argenteis.

8. Ruta; ſylveſtris; minor, *C. B. P.* 336. *J. B.* 3. 200. *Peganium Narbonenſium*, Lob.

9. Ruta; ſylveſtris; major, *J. B.* 3. 200. *C. B. P.* 336. *Park. Theat.* 133. *Raii Hiſt.* 1. 874. *Tourn. Inſt.* 257. *Boerh. Ind. A.* 260. *Ruta Montana*, Offic. Ger. 1071. Emac. 1255. WILD RUE.

It grows on Mountains, and flowers in *July*, and is ſuppoſed to have the ſame Virtues as the Garden-Rue, but is more acrimonious.

10. Ruta; ſylveſtris; liniſolia; Hiſpanica, *Bocc. Muſ. Part.* 2. 82. *Tab.* 73. *Boerh. Ind. Alt. Plant. Vol.* 1.

RUTA is alſo a Name for the HARMALA; which ſee.

RUTA CANINA. A Name for the *Scrophularia*; *Ruta Canina dicta vulgaris.*

RUTA CAPRARIA. *Goats Rue.* See GALEGA.

RUTA HYPERICOIDES. A Name for the *Hypericum*; *fœtidum*; *fruteſcens.*

RUTA MURARIA. See ADIANTHUM ALBUM.

RUTA PRATENSIS. A Name for the *Thalictrum*; *pratenſe*; *anguſtifolium.*

RUTACEUM. Vinegar of Rue. See ACETUM.

RUTETA. The ſame as TARANTULA; which ſee.

RUTICILLA. A Bird called the Red-Tail, or Red-Start. The ſame as PHOENICURUS.

RUTILUS. Offic. Schonf. Ichth. 63. *Rutilus, ſive Rubellus fluviatilis*, Geſn. de Aquat. 821. *Rutilus fluviatilis*, Jonſ. de Piſc. 99. *Rutilus, ſive Rubellus fluviatilis Geſneri*, Aldrov. de Piſc. 732. 621. Raii Ichth. 262. Ejuſd. Synop. Piſc. 122. *Rutilus, ſive Rubellus*, Mex. Pin. 190. THE ROCHE.

The Fleſh of this Fiſh, which is very common in Rivers, is ſaid to promote Venereal Inclinations.

RUYSCH. A celebrated Anatomiſt of *Holland*. See a farther Account of him under the Article ANATOME.

RUYSCHIANA.

The Characters are;

The Root is perennial, and the Leaves are not ſo thick as thoſe of Roſemary; the Galea is hollow, bifid and trifid, the Beard trifid, the middle Segment hanging forward, bifid, and ſpirally convolved. The Flowers are beautiful, generally ſet at firſt by Sixes in thin Whorles, but afterwards collected into a Spike.

Boerhaave mentions but one Sort of this Plant, which is,

Ruyſchiana; flore cæruleo, magno. *Hyſſopus Auſtriaca, magno flore, folio Chamæpitidis.* H. L. *Chamæpitys, cærulea, Auſtriaca*, C. B. P. 250. *Prunella, Hyſſopi folio viridi, amplo flore cærulæo*, M. H. 3. 364. *Boerh. Ind. Alt. Plant. Vol.* 1.

S.

S. For the Signification of this Letter in the Chymical Alphabet, ſee ALPHABETUM CHYMICUM.

S. f. or ſs. immediately following any Character importing Quantity, ſignifies *Semis*, Half.

SAAMOUNA. A Name for the PAVIA.

SABDARIFFA. A Name in *Boerhaave* for the *Ketmia*; *Indica*; *vitis folio*; *ampliore.*

SABINA.

The Characters are;

The Leaves reſemble thoſe of the Cypreſs, but are more compact; the Berries are verrucoſe; it has a very ſtrong and ſingular Smell.

Boerhaave mentions two Sorts of *Sabina*, which are;

1. Sabina; folio Tamariſci; Dioſcoridis. *C. B. P.* 487. *Boerh. Ind. A.* 2. 207. *Sabina*, Offic. Park. Parad. 607. *Sabina vulgaris*, Theat. 1027. Raii Hiſt. 2. 1415. *Sabina ſterilis*, Ger. 1193. Emac. 1376. J. B. 288. SAVINE.

Savine is an ever-green ſhrubby Tree, that ſeldom grows very tall, having the Branches ſet cloſe together, cloathed with narrow, ſhort, ſomewhat prickly Leaves, pretty much reſembling Cypreſs, of a very ſtrong Smell; among theſe, after the Tree is old, and has ſtood long in a Place, grow ſmall moſſy greeniſh Flowers, which are ſucceeded by ſmall flattiſh Berries, leſs than thoſe of Juniper, of the ſame blackiſh, blue Colour. It is planted in Gardens, where it ſeldom produces Fruit, and has therefore generally been reputed barren.

Savine is hot and dry, opening and attenuating, and a powerful Provoker of the Catamenia, cauſing Abortion, and expelling the Birth. It is very good to deſtroy Worms in Children. Mr. *Ray* recommends the Juice of it, mixed with Milk, and ſweetened with Sugar, as an excellent Medicine for that Purpoſe; beaten into a Cataplaſm, with Hog's Lard, it cures Children's ſcabby Heads.

Officinal Preparations are, the *Oleum Sabinæ per infuſionem decoctionem*, and the *Oleum Sabinæ chymicum. Miller's Bot. Off.*

Boerhaave, in his Chymiſtry, aſſerts, that a Water prepared from Savine, by repeated Cohobations, is a moſt excellent Ecbolic, Emmenagogue, and Promoter of the Hæmorrhoides; that it is heating, and a moſt excellent Medicine, if uſed diſcreetly. He farther informs us, that the chymical Oil of Savine is a moſt powerful Promoter of the Menſes, when their Retention proceeds from a Languor and Debility only.

A Cataplaſm, made of the Seeds of Savine, bruis'd with Sal Gem and Oil, is ſaid to be good for an Anchyloſis; and a Cataplaſm of the ſame Leaves, mixed with Honey, is frequently applied to the umbilical Region, in order to deſtroy Worms in the Belly.

2. Sabina; folio Cypreſſi. *C. B. P.* 487. *Boerh. Ind. A.* 2. 207. *Sabina* Offic. *Sabina baccifera*, J. B. 1. 288. Ger. 1193. Emac. 1376. *Sabina baccifera major*, Park. Theat. 1026. *Cedrus baccifera fructu minore cæruleo*, Raii Hiſt. 2. 1415. *Juniperus Alpina Sabinam referens*, Pluk. Almag. 201. BERRIED SAVINE.

This Plant is cultivated in Gardens, and is ſaid to be attenuating, and inciding; powerfully to provoke the Menſes, to promote the Expulſion of the Secundines, and to deſtroy Worms in the Inteſtines.

SABON, or SABENA. Soap, or a Lixivium from whence Soap is made.

SACCELLUM. The ſame as SACCULUS.

SACCHAR, or SACCHARUM. σάκχαρ, or σάκχαρον. Sugar.

With reſpect to the Sugar, or σάκχαρον, *Saccharum*, of the Antients, which is ſaid to be the ſame with μέλι καλάμινον, "Honey of Reeds," of *Theophraſtus*, and which others called ἅλας Ἰνδικὸν, "Indian Salt," *Salmaſius* ſays, that it was gathered from ſome Reeds or Canes, as tall and big as Trees, and that it is the ſame as they now call *Sacar Mambu*. The *Arabians* gave it the Name of *Tabaxir*, which is ſtill in Uſe in *Turkey* and *Perſia*, to ſignify that Kind of Sugar. But as neither the *Arabians*, any more than the *Greeks*, had ever ſeen in their own Country the Reed which produced it, and ſpoke of it only by Hearſay, they entertain us with nothing but mere Fables on that Subject. *Avicenna* tells us, that it is ſuppoſed that the Canes of the *Tabaxir* being agitated by the Wind, ſhock and bruiſe one another in ſuch a Manner as to take Fire, and kindle into a Flame, and that the Aſhes which are collected after this Combuſtion, at the Bottom of the Canes, is the *Tabaxir*. He confeſſes indeed, that this is a vulgar Story, to which he gives no Credit; but he believes, however, that the *Tabaxir* is the Aſhes of *Indian* Reeds, or of their Roots, which are burnt on Purpoſe; and *Averroes* ſays, that it is the Charcoal made of the Joints of the ſame Reeds.

Salmaſius obſerves, that this Error of the *Arabians*, in ſuppoſing their *Tabaxir* was a Kind of Aſhes, becauſe it was in the Form of a greyiſh Powder, gave Occaſion to the modern *Greeks*, who tranſlated thoſe *Arabians*, to render the Word *Tabaxir* by *Spodium*, which comes from σποδὸς, *Spodos*, Aſhes. And this has been the Cauſe of great Confuſion in Medicine; for the antient *Greeks* gave the Name of *Spodium* to what we now call *Putty*, [*Dale* ſays the *Spodium Græcorum* was Putty] but the modern *Greeks*, and all the Phyſicians and Apothecaries after them, have called burnt Ivory by that Name; ſo that there are three very different Things, a Kind of Sugar, the Aſhes or Soot of a Mineral, and the Aſhes of Ivory, all under one Denomination.

To return to the *Spodium*, which is the *Tabaxir*, it is further to be obſerved, that the *Arabians* diſtinguiſhed it from the Sugar of the Ancients, tho' it was, as we ſaid, the very ſame Thing, becauſe they believed that their *Tabaxir* was a Kind of Aſhes, whereas the Sugar of the Antients was deſcribed as a Dew which fell upon the Canes, or as a ſweet and fat Juice which flowed from the Cane itſelf, when it was burnt. On the other hand, they believed that our Sugar was the ſame which they found in the Writings of the *Greeks* under the Name of σακχαρον, *Saccharon*, and upon that Account they called it *Suchar*, or *Zuchar*, tho' there be really a good deal of Difference between thoſe two Sugars. The firſt, or that of the Antients, beſides, that it proceeded from a very large Reed, as we before obſerved, flow'd from it naturally and ſpontaneouſly, like a Kind of Manna, whereas our Sugar is the Juice of a much ſmaller Cane, which muſt be ground and preſſed in order to extract its Juice; and this Juice muſt afterwards be boiled and purified, to acquire the Conſiſtence it has.

Salmaſius ſhews, that the Sugar which we now uſe was abſolutely unknown to the Antients. *Seneca*, ſays he, tells us, "It is reported that Honey is found among the *Indians* in "the Leaves of Reeds, which is generated either by the Dew "of that Climate, or the ſweet and fat Humour of the Reed "itſelf." You ſee by this how little known and uſed the *Tabaxir* was by the Antients, ſince *Seneca* ſpeaks of it only by Hearſay. The *Arabian* Authors who reckon ſeveral Kinds of Sugar, omit this which was the only kind known to the Ancients by that Name; and the Reaſon was, as we hinted before, they did not take it for a Sugar, but a Spodium. Thus

Salmaſius,

Salmaſius, who believes, however, that the Antients, tho' utterly unacquainted with our modern factitious Sugar, might have heard ſpeak of the Cane which produces it, and of its Juice; but that the *Indians* themſelves of thoſe Times knew not how to make the Sugar, and only uſed the expreſſed Liquor of the Cane, which is ſweet, for a Drink. As a Proof that the Antients had ſome Knowledge of the Sugar-Cane, he quotes thoſe Verſes of *Varro Atacinus*:

Indica non magna nimis Arbore creſcit Ariundo,
Illius è lentis premitur radicibus humor,
Dulcia cui nequeant ſucco contendere Mella.

"In *India* there grows a Cane of a moderate Bigneſs, from "whoſe viſcid Roots is expreſſed a Liquor with which Honey "itſelf cannot be compared for Sweetneſs." *Salmaſius* however intends not to prove that the Invention of Sugar, or the Way of preparing it as we now have it, is very new; but acknowledges that it was diſcovered above eight hundred Years ago, and that it was grown very common in the Time of *Avicenna*.

The Cane which produces the common Sugar is thus diſtinguiſhed.

Arundo Saccharina, J. B. 2. 531, Ger. 35. Emac. 38. Raii Hiſt. 2. 1278. *Arundo Sacchariſera*. C. B. Pin. 18. Theat. 193. Boerh. Ind. A. 2. 162. *Harundo Sacchariſera*, Park. Theat. 1210. *Canna Sacchariſera*, Ogilb. Chin. 1. 228. *Arundo Viba Braſilienſibus dicta*, Piſ. (1648.) *Tacomarce ſive Arundo Sacchariſera*, Ejuſd. (1658.) *Vubæ & Tacomarce Braſilienſibus*, Mareg. 82. THE SUGAR CANE.

This Species of Cane is produced in large Quantities in the *Eaſt* and *Weſt Indies*, and the Iſlands moſt contiguous and adjacent to them. Its Stalk and Leaves reſemble thoſe of the common Cane, only its Stalk or Trunk is not ſo high as that of the other, ſince it is only ſix or ſeven Feet in Length. The Stalk of this Species is of a Colour like that formed by a Mixture of yellow and green. 'Tis more than an Inch in Circumference, furniſhed with Knots or Joints, and full of a ſpongeous, white and ſweet Pith. Its Root is not unlike that of the common Cane, but is not ſo woody, tho' it abounds with a ſweet Juice. *Lobelius in Adverſar.* informs us, that its Root dried and reduced to a Powder, is a Meal uſed by many of the *Indians* for making a Species of Bread of a very agreeable Taſte. The beſt Cane is produced in the *Canary* and *Madera* Iſlands. That growing at *Java* and *Madagaſcar* is alſo excellent. This Species of Cane yields the Sugar by *Latin* Writers called *Saccharum*, *Zuccharum*, *Zuccorum* and *Sucharum*. The *Arabians* call it *Zuchar*, *Zuccara*, *Succhar*, *Zozar*, and *Sutter*, and the *Greeks*, Σακχαρον, Σακχαρ, Σάκχαρι, and Σάκχαριον. Many call it *Mel Arundinaceam*, after it is boiled, evaporated, and put in wooden Veſſels for Exportation.

There are in the Shops various Species of Sugar, which receive their Appellations either from the Parts in which they are produced, or from their Goodneſs and Fineneſs. Thus we have *Canary Sugar*, *Valentian Sugar*, *Malta Sugar*, *Powder Sugar*, *Refined*, and *Double Refined Sugars*, *Thomaſian Sugar*, from an Iſland of the *Indies* bearing the Name of *St. Thomas*, *Sugar Candy* and *Penidian Sugar*, and *Coarſe Red Sugar*, moſt generally uſed in Clyſters, on Account of its abſtergent and reſolvent Quality. *Barley Sugar* is alſo a factitious Sugar, and is accounted good for the Breaſt and Throat. The beſt of it is white, ſpongious, large, and eaſily broken. For Coughs in Children it is exhibited with Oil of ſweet Almonds, or Syrup of Violets. The Diapenidion of the Shops cures Diſorders of the Breaſt, alleviates Coughs, is good againſt pleuretic Pains, a Difficulty of Breathing, Conſumptions, Diſorders of the Lungs, and Spittings of Blood. Liquid Sugar remains always in the Conſiſtence of Honey or Syrup, and is no more than the Froth gathered in refining the other Sugars. As for the Nature and Qualities of Sugar in general, it is temperate, heating, emollient, reſolvent, purgative, and calculated to reſiſt Putrefaction. If it is properly uſed, it nouriſhes the Body; for according to *Claud. Diodat. Panth. Hygiaſt*, *L.* 1. *Cap.* 21. nothing nouriſhes which is entirely free from Sweetneſs. It is good for the Stomach, Lungs and Breaſt, cures Coughs, and all Diſeaſes of the Thorax, promotes Expectoration, ſoftens internal Tumors, cleanſes Ulcers of the Kidneys, Bladder, and Inteſtines, hinders all corroſive Subſtances from ſo eaſily corroding the internal Parts, makes agreeable Sweet-meats, and renders ungrateful Medicines agreeable. But the more white and pure Sugar is, the leſs ſweet it, alſo, is, as we are informed by *Piſ. l.* 4. *de Facultat. Simpl. cap.* 1. and *Eraſm. Francis*; for if coarſe brown Sugar is diſſolved in a Lixivium of Lime Water, refined and ſeparated from its groſſer and more impure Parts, it aſſumes an acid Taſte, different from what it had before, and overheats the Blood; for which Reaſon, Perſons of hot and bilious Conſtitutions ought to be very cautious in uſing it, except in Medicines, ſince it will ſoon be converted into Bile: For according to *Ettmuller*, by its volatile Acidity it diſturbs the Bile, and excites a preternatural Orgaſm in it. And according to *Henricus ab Heer*, *Obſ. Med.* 5. it is principally injurious to ſcorbutic, hypochondriac, cachetic, and feveriſh Patients, if they uſe a conſiderable Quantity of it; becauſe, being eaſily converted into Bile, it augments the Fever and all its Symptoms. It is alſo injurious to Women who labour under a Suffocation and Strangulation of the Uterus, relaxes the Mouth of the Stomach, and, according to *Ettmuller*, on account of its eaſily fermentable Quality, ſoon becomes aceſcent in the Stomach, and *Primæ Viæ*. It weakens Digeſtion, and produces Flatulences, and ſudden Heats, impairs the Appetite, generates a corroſive Blood, produces Pains of the Belly and Dyſenteries. According to *Jo. Chr. Fromman. Tr. de Hæmorrhoid. Part.* 1. *Probl.* 33. it lays a Foundation for the Hemorrhoids. This Opinion is alſo confirmed by *Melch. Sebiz. L.* 2. *de Facult. Aliment.* and *Val. Henr. Volger. Diætet. Comment. cap.* 9. *Simon Pauli in Quadriport. Botan.* informs us, that in *England* an exceſſive Uſe of Sugar produces Conſumptions; and *Ehrenfr. Hagendorn*, *in Hiſt. Med. Phyſ.* 23. *Cent.* 3. tells us, that Sugar produces an irregular Gout. Not only Women, but, alſo, ſeveral Phyſicians are of Opinion, that Sugar and Honey generate Worms in Children; but if we reflect on the Generation of theſe Animals, we ſhall eaſily perceive that it is hindered by nothing more than by Sugar and Honey. *In Act. Med. Leipſ. An.* 1700. Sugar copiouſly uſed is recommended againſt Worms. This Piece of Practice is alſo authoriſed by *Levinus Lemnius*, *L.* 1. *de occult. Nat. Mir. Cap.* 21. *J. Heurn. de Peſte*, *Cap.* 21. *J. Varand. de Morb. Inteſtinor. Cap.* 2. *Laur. Strauſſ. Palæſtr. Med. L.* 3. And *A. Vincent de Petrone*, in his *Conſilium de Vermiculis quibuſdam in Corvorum & Aprorum Hepate inventis*; for 'tis certain that Worms are generated either by a coarſe, crude, and verminous Matter, ſubject to Putrefaction, or by the Eggs of Inſects taken in with the Aliments. But Sugar and Honey never putrefy, as we are told by *Galen*, *in Lib.* 3. *de Simpl. Med. Facultat. cap.* 15. On the contrary, Sugar and Honey, by means of their balſamic Quality, which reſiſts Putrefaction, are very proper for preſerving Subſtances for a long Time. For this Reaſon in the Shops, Conſerves, Syrups, Electuaries, Linctuſes, and Confections, cannot be made without Sugar: Neither can Roots, and various other Things be preſerved without it; for it not only aſſumes the Smell, Taſte, and Colour of all the Ingredients, but alſo preſerves their Virtues and Qualities for many Years. For this Reaſon alſo the Ancients embalmed their Dead with Honey. Confirmations of this may be found in various practical Authors. *Ant. Mizald. in Cent.* 5. *Aph.* 27. informs us, that not only Butter, but alſo ſweet Subſtances and Raiſins kill Worms. And *Sanctor. in Lib.* 5. *Meth. Vitand. Error. Cap.* 11. tells us, that Honey and Sugar are poſſeſſed of a certain intenſe Acrimony and Heat, by which they are greatly defended againſt Putrefaction. Externally Sugar cures recent Wounds, purifies Ulcers, removes white Spots and Films from the Eyes, according to *Marc. Gatinar. in Prax. Med. cap.* 21. The *Turks*, in order to cure their Wounds, waſh them twice a Day in Wine, and afterwards put Sugar in them. *Joh. Haricus*, in his *Theſaurus aureus*, *Part.* 2. informs us, that Sugar ſprinkled on the Crown of the Head, removes Head-achs. *In Riedlin. Lin. Med. An.* 2. we are told that Sugar, mixed with Oil of Marjorum or Cloves, and taken up the Noſtrils, removes a Coryza. According to *Joh. Beguinus in Tyrocin. Chym. L.* 2. *cap.* 6. Oil of Sugar relieves Pains of the Breaſt, Coughs, Aſthma's and Hoarſeneſs, in ſome Meaſure ſtops Catarrhs, and promotes Digeſtion. The ſame Author alſo informs us, that Tincture of Sugar, exhibited in Cinnamon or Roſe Water, is excellent in Syncopes and Deliquiums.

Sugar is the eſſential Salt of the *Arundo Sacchariſera*, or Sugar-Cane, the different Kinds of which are theſe:

Muſcovado, the firſt Sugar got from the Juice of the Canes.

Caſſonada, Sugar refined from the former by the Whites of Eggs, Lime-Water, *&c.* which being more oily than the more refined Sorts, is to be preferred for all inward Uſes. It is alſo moſt proper for Confectioners, becauſe it does not candy ſo eaſily.

Loaf-Sugar; *Caſſonada*, ſtill further refined, and clarified in different Degrees. It has the ſame Qualities with the former, but in a leſs Degree for inward Uſe. They both cut Phlegm, promote Expectoration, and animate the Blood; but they excite Vapours and the Tooth-ach. They who uſe much Sugar, are liable to Fevers and to rotten Teeth. In *Braſil*, the Skimmings of Sugar are given to the Hogs, by which they are ſoon fattened, and their Fleſh becomes very delicate.

Sugar-

Sugar Candy, or Cryſtals of Sugar is of three Kinds, white, yellow, and red; which are only the three former Sorts boiled to a due Conſiſtence. White Sugar Candy comes from the *Loaf Sugar*; yellow from the *Caſſonado*, and red from the *Muſcovado*. Sugar Candy is moſt proper in Colds, becauſe it melts ſlowly, and thereby gives Time to the Saliva to mix with it, and thus to blunt the Acrimony of the Phlegm.

Red Sugar. This was uſed very much formerly in Looſeneſſes; but at preſent Oil of Sweet Almonds, and other Things of that Kind are ſubſtituted for it.

Syrup of Sugar, or *Moloſſes*, is the glutinous Part which drains from Sugar, and was formerly uſed for the red Preſerves or Sweet Meats; but it gave them a diſagreeable burnt Taſte. In the *Weſt Indies* they ferment and diſtil it; but the Brandy or Spirit which it yields is unpleaſant and very intoxicating. A much better Spirit might be made of refined Sugar.

To theſe we may add the *Saccharum Acernum*, Maple Sugar; which is the Product of *Canada* and *New England*, in which Countries the Natives collect the Juice that runs from a kind of Maple Tree by Inciſion, and then evaporate that Juice to the Conſiſtence of Sugar, which, while it remains unctuous, is better for internal Uſe than any other Kind; and the famous Syrup of Maiden-Hair of *Canada* is made with it. As it is brought to us, it is of a greyiſh Colour, and taſtes like other Sugar. With this Sugar the Inhabitants of theſe Countries prepare alſo a Sort of Liquor, which is their common Drink; and alſo make Brandy and Vinegar from it. *Geoffroy*.

As Sugar is a temperate Salt, friendly to Nature, and capable of producing an intimate Union of oleous and pinguious Parts with Water, hence appears the Reaſon why ſome both among the Ancients and Moderns, uſed to mix Honey, Sugar, Figs, and dried Grapes, with the Food intended to fatten old Animals; for the pinguious Parts of the Aliments, which, when intimately incorporated with the aqueous Parts, conſtitute the Milk and Chyle, are by this Means more quickly diſſolved, united with the aqueous Parts, and form a large Quantity of Chyle, which is conveyed with the Blood to all the Parts of the Body.

Hence alſo appears the Reaſon why either Honey or Sugar, mixed with Milk, prevents its Elaboration into Butter; for the Sugar more firmly unites with the Phlegm the numerous oleous Particles in the Cream; whereas, in order to the Churning of Butter, or its Collection into one Maſs, theſe ought rather to be ſeparated and disjoined from each other.

Hence we may alſo learn, that Sugar is not ſo unfriendly to the Mixture of the vital Fluids, as is commonly believed, ſince it neither induces any Change on the Blood, Milk or Serum, when mixed with them, but rather by ſtimulating the inteſtinal Fibres, facilitates the Excretion of the Fœces by Stool. And as it greatly promotes the Union of the oleous with the aqueous Parts of the Aliments, hence 'tis probable that it greatly contributes to the Generation of a large Quantity of Chyle. This accounts for the uſual Method of fattening Capons and Geeſe, by mixing a little Honey, Sugar, or Salt with Wheaten or Barley-Meal for their Food. *Hoffman. Obſervat. Chym. L.* 1. *Obſ.* 7.

I have had Reaſon to give a great Character of Sugar, on account of ſome extraordinary Effects it ſeemed to have on my Grandfather forty Years ſince. He made it his daily Practice to take or lick up as much Sugar as his Butter ſpread upon Bread would receive, for his conſtant Breakfaſt, unleſs he happened to exchange it for Honey ſometimes. He frequently ſweetened his Ale and Beer with Sugar: He had Sugar put to all the Sauces he uſed with his Meat: He had all his Teeth in his Mouth at eighty Years, ſtrong and firm; never had any Pain or Soreneſs in his Gums or Teeth; never refuſed the hardeſt Cruſt. In his eighty ſecond Year one of his Teeth drop'd out, and ſoon after that a ſecond, which he put into my Hand, and was one of the Fore-teeth: He bid me feel the Cavity, where I ſtruck my Nail upon a Bone. In ſhort, all his Teeth came out in two or three Years, and young ones filled up their Room: He had a new Set quite round. His Hair, from a very candid white, became much darker. He continued in good Health and Strength without any Diſeaſe, and died in his 99th or 100th Year, of a Plethora, as I gueſs, for want of Bleeding. He was a *Bedfordſhire* Gentleman of an old *Engliſh* Family, and the Caſe well known. This reconcil'd me much to vindicate Sugar, which I have formerly done before the Royal Society; and have ſhewn the unjuſt Calumny of the famous *Willis* againſt Sugar, who charges it with a corroſive Liquor, as bad as *Aqua Fortis*; he calls it *Aqua Stygia*. I examined it, and found the Charge unjuſt; that Sugar contained no worſe Subſtance in it, than Milk and Honey, and Manna, nay even Bread itſelf. The Experiments were approved of, and are in your Journals. *By Dr. Slare*, in the *Philoſophical Tranſactions abridged*, *Vol.* 5. *p.* 311.

Mr. *Sarrazin*, a Phyſician of *Quebeck*, and Correſpondent of the Royal Academy, found in *North America* four Species of Mapple-Trees, which he ſent as a Preſent to the Royal Garden, after having given a Name to each. The fourth of theſe Species, which he calls *Acer Canadenſe Sacchariferum, fructu minori*, *D. Sarrazin*, is a Tree about ſixty or eighty Feet high, whoſe Sap, which aſcends from the firſt of *April* to the Middle of *May*, is pretty often richly impregnated with Sugar, as the Natives of that Country and the *French* have found. For obtaining this Sap they make an Inciſion in the Tree, from which it flows into a Veſſel. This Juice, when evaporated, leaves about a twentieth Part of its primitive Weight, which is true Sugar, and proper to be uſed in making Confections, Syrups, and other Things, in which Sugar is generally employed. One of theſe Trees, which is three or four Feet in Circumference, will in one Spring yield ſixty or eighty Pints of Juice, without loſing any Thing of its Vigour. But if more was drawn from it, it is obvious that the Tree would be weakened, and a proportionable Decay brought on. This Juice, in order to be impregnated with Sugar, requires very ſingular Circumſtances, which one would not eaſily conjecture, but which Mr. *Sarrazin* has carefully adverted to; for, firſt, at the Time the Juice is drawing, the Root of the Tree muſt be covered with Snow, which muſt be brought for that Purpoſe, if it is not there already: Secondly, this Snow muſt be melted by the Sun, and not by a warm Air: And, thirdly, it muſt have been a Froſt the Night before. This Method uſed by Nature in forming the Sugar of the Mapple-Tree, reſembles ſome delicate chymical Operations, where the Chymiſt does Things apparently oppoſite, and where thoſe Things which appear the moſt ſimilar do not produce the ſame Effects.

Another curious Remark of Mr. *Sarrazin's* is, that the Juice of this Species of Mapple-Tree, which is not good for making Sugar, will become ſo half an Hour, or an Hour at moſt, after the Snow with which the Root of the Tree is covered, begins to be melted. This Snow muſt therefore enter the ſmall Filaments of the Mapple-Tree, and operate in them with great Expedition.

Mr. *Sarrazin* alſo informs us, that the *Apocynum Majus Syriacum rectum*, furniſhes a Juice of which they make Sugar in *Canada*; for this Purpoſe they alſo gather the Dew found in the Bottom of its Flowers. *Hiſt. de l'Acad. Royal des Sciences*, *An.* 1730.

SACCHARUM HORDEATUM. *Barley Sugar.*

It is made from Sugar boiled over a ſlow Heat, in a Decoction of Barley, briſkly beat up with the Whites of Eggs, and frequently ſcummed whilſt upon the Fire. It is then to be ſtrained through a Flannel, and again ſet upon the Fire, where it muſt boil ſlowly till it riſes in large Bubbles, and upon Trial is found not to ſtick to the Teeth. It is to be poured upon a Marble-Stone rubbed over with Oil of ſweet Almonds, as ſoon as the Bubbles ſubſide, and its Extremities, as it runs out, turn back again, till it grows of the Conſiſtence of a thick Turpentine, when it muſt be faſtened to ſomething, and nimbly drawn out by Hands rubbed over with Starch, into thin or thick, long or ſhort Threads at Pleaſure, and laid upon a Plate provided on Purpoſe, till it hardens into Lozenges.

SACCHARUM NITRATUM. *Sugar with Nitre.*

Take Cryſtal Mineral, one Dram, fine Loaf Sugar three Drams, mix together.

This is cooling and diuretic, and alſo ſerviceable in the ſcalding of Urine in a Gonnorhœa; but it is principally good to cool the Inflammation of the Uvula, and eaſe a ſore Throat, by letting it melt gently in the Mouth.

SACCHARUM ROSATUM. See Rosa.

SACCHARUM SATURNI. See Plumbum.

SACCHARUM SCORBUTICUM. *An Antiſcorbutic Sugar.*

Take any Quantity of the Juice of Scurvy-Graſs, keep it in a Glaſs Bottle cloſe ſtopped up till the Fœces are precipitated; then decant the clear, put a good Quantity of Sugar in a Marble Mortar, and work it well together, then gently dry it. Afterwards put more Juice to the ſame Sugar, dry it again, and repeat this Operation ſeveral Times, and keep it cloſe ſtopt for Uſe.

SACCHARUM TABULATUM SIMPLEX ET PERLATUM, *Simple and Pearl Lozenge Sugar.*

The firſt is made by pouring Sugar, which hath been ſufficiently boiled with half its Quantity of Damaſk Roſe-Water upon a Marble: And the latter by adding to every Pound of the former, towards the End of its boiling, half an Ounce of prepared and levigated Pearl, with eight or ten Leaves of Gold.

SACCHARUM TABULATUM COMPOSITUM. *Compound Lozenge Sugar.*

Take of fine Rhubarb four Scruples, of the Troches of Agaric, of Coralline, burnt Hartſhorn, of the Leaves of Cretan Dittany, of Worm-ſeed, of the Seeds of Purſlain and Sorrel, of each one Scruple; of Cinamon, Zedoary, Cloves, and Saffron, of each half a Scruple; of the fineſt Sugar powdered one Pound. Let the Sugar be diſſolved in five Ounces of ſimple Wormwood Water, and one Spoonful of ſtrong Cinnamon Water; and the foremen-tioned Species mixed with it, ſo as to make it into Tablets.

SACCITONIUM. Wine ſtrained through a Bag. *Caſtellus* from *Codronchius.*

SACCULI ADIPOSI. The Cells of the Cellular Membrane filled with Fat.

SACCULI MEDICINALES. Medicinal Bags; that is, Bags filled with Medicinal Ingredients.

SACCULUS CHYLIFERUS. The Receptacle of the Chyle.

SACCULUS CORDIS. The *Pericardium.*

SACCUS. The *Inteſtinum Cæcum.*

SACCUS LACTEUS. The *Receptaculum Chyli.*

SACER. Sacred or holy. But it is uſed in a very different Signification, that is, to expreſs *dreadful*, *horrid*, or *execrable.* Thus *Virgil* calls the Love of Gold, *Auri ſacra fames.* In both theſe Significations it is uſed by Medicinal Writers. Thus,

SACRA FISTULA, is the Spinal Marrow, according to *Blancard.*

SACER IGNIS, is a malignant Species of ERYSIPELAS.

SACER MORBUS, is the Epilepſy.

SACER MUSCULUS, is the Name of a Muſcle, called by *Winſlow Tranſverſo Spinalis Lumborum.*

This Muſcle is compoſed of ſeveral oblique converging or tranſverſo-ſpinal Muſcles in the ſame Manner as in the Back and Neck; and it lies between the ſpinal and oblique Apophyſes of the Loins, reaching to the *Os Sacrum.*

The loweſt of theſe Muſcles are fixed to the ſuperior lateral Parts of the Os Sacrum, to the *Ligamentum Sacro-Iliacum*, and to the poſterior ſuperior Spine of the Os Ilium. The reſt are fixed to the three loweſt tranſverſe Apophyſes, and to the four loweſt oblique Apophyſes of the Loins, and to their lateral Tuberoſities. From thence they run up to all the ſpinal Apophyſes of theſe Vertebræ, the external, or thoſe that appear firſt, being longer than the internal, which lie immediately on the Vertebræ, eſpecially toward the lower Part. *Winſlow's Anatomy.*

SACRUM OS.

The *Os Sacrum* is ſituated in the poſterior and lower Part of the Trunk, as the Baſis by which the whole Spine is ſupported, and from hence it has by ſome been termed *Os Baſilare.*

Its Figure comes near that of a long Triangle, with the Baſis upward, and the Apex downward. It may be divided into the upper Part or Baſis; the lower Part or Apex; two Sides, the anterior or concave; and the poſterior or convex; and two lateral Parts or Edges. We here conſider it as one Bone only, as it is in an adult Subject.

In young Subjects it is made up of ſeveral diſtinct Pieces, termed falſe Vertebræ, united together by Cartilages, which in time diminiſh, grow hard, and diſappear, leaving no Marks behind them, but little Ridges or Lines more or leſs prominent. Theſe Pieces are five in Number, and ſometimes ſix, all of them reſembling the Vertebræ in ſomething. The firſt is much larger than any of the true Vertebræ; but their Size diminiſhes by very great Degrees as they deſcend, ſo that the loweſt, which makes the Point of the *Os Sacrum*, has ſcarcely the Appearance of a Vertebra.

In the anterior or concave Side, we commonly ſee four Pair of large Holes, and ſometimes more (according to the Number of falſe Vertebræ) diſpoſed in two longitudinal Rows, and appearing to be formed by the Notches in the original Pieces meeting each other. Between theſe two Rows of Holes, through the whole Length of the Middle of this Side, we obſerve the Bodies of five or ſix falſe Vertebræ cemented together, of which the uppermoſt or firſt comes nearer to the Structure of a true Vertebra than the reſt. The laſt is very ſmall, and below the Holes it has a Notch on each Side, and ſometimes a Production in the Shape of a little Horn.

The poſterior or convex Side is very uneven. The ſame Number of Holes appear here, as in the fore-ſide, and diſpoſed in the ſame Order, but they are not ſo large. Between the two Rows of Holes, is a Sort of ſpinal Apophyſis more or leſs imperfect, eſpecially toward the upper Part. In theſe Apophyſes we often find Openings, ſometimes in the ſuperior, ſometimes in the inferior, and thus perpendicular Fiſſures are formed of different Breadths. Sometimes a tranſverſe Opening is left between the ſeveral Spines; but in all that has been here ſaid, great Varieties are obſervable. On the Outſide of each Row of Holes are Tuberoſities which appear like tranſverſe and articular Apophyſes confounded together. At the Baſis or upper Part of the *Os Sacrum* are two articular Apophyſes, anſwering to the inferior ones of the laſt Vertebra of the Loins. Below each of theſe Apophyſes, laterally, is a large Notch; and between them, we ſee diſtinctly enough the upper Side of the Body of the firſt falſe Vertebra, which is like that of the Lumbar Vertebræ, being very much inclined backward: ſo that the Body of this falſe Vertebra, as well as of the laſt true one, is longer before than behind. From this Obliquity it happens, that the *Os Sacrum* and laſt Lumbar Vertebra, form, at their Connexion, a very conſiderable Angle.

Behind the Body of this firſt Vertebra of the *Os Sacrum*, between the articular Apophyſes lies the Orifice of a large Canal, triangular and flat, which runs down in the Middle Subſtance of the Bones between the two Sides, and between the four Rows of Holes, behind the Bodies of all the falſe Vertebræ. It contracts as it deſcends, and communicates with all the large Holes, being the Continuation of the great Canal of the Spine. It is often broke into by the Fiſſures already mentioned, on the Back-ſide.

The lateral Parts are broad toward the Top, forming on each Hand, a large, uneven, irregular, cartilaginous Surface, in the Figure of a great S, and ſometimes of a Bird's Head. By theſe two Sides the *Os Sacrum* is connected with the *Os Innominata*, by a cartilaginous Symphyſis. Between each of theſe lateral Sides, and the neareſt poſterior Holes, there is a large rough Depreſſion, and under that, another not ſo large. Theſe Depreſſions are often pierced by ſeveral Holes, which loſe themſelves in the inner Subſtance of the Bone. *Winſlow's Anatomy.*

SACRA TINCTURA. See HIERA.

In *Paulus Ægineta*, L. 7. C. 8. there are ſeveral *Hieras* deſcribed, which imports the ſame as *Sacra.* Thus there is the *Hiera Archigenis*, *Hiera Antiochi*, *Hiera Juſti*, *Hiera Galeni*, and *Hiera Ruffi.*

SACRA VASA. The Veſſels which belong to the *Os Sacrum*, and Parts adjacent.

SACRANUS COLOR. A Purple Colour. *Johnſon.*

SACRES. Pigs about ten Days old. *Caſtellus* from *Langius.*

SACRO-LUMBARIS MUSCULUS. This is a long complex Muſcle, narrow and thin at the upper Part, broad and thick at the lower, repreſenting a kind of flat Pyramid. It lies between the Spine and poſterior Part of all the Ribs, and along the back Part of the *Regio-Lumbaris*, all the Way to the *Os Sacrum.*

Through all this Space it is cloſely accompanied by the *Longiſſimus Dorſi*, which lies between it and the Spinal Apophyſes of the Vertebræ, a narrow, pinguious, or cellular Line running between them. The Name of *Lumbo-Coſtalis* would better expreſs the Situation of this Muſcle than that of the *Sacro-Lumbaris.* It might be termed *Medius Dorſi*, to diſtinguiſh it from the *Latiſſimus* and *Longiſſimus Dorſi*, between which it is placed.

It is fixed below by a broad thin tendinous Aponeuroſis to the ſuperior Spines of the *Os Sacrum*, and to the neighbouring lateral Parts of that Bone; and laſtly, to the external Labium of the poſterior Part of the *Criſta Oſſis Ilium*, all the Way to the great Tuberoſity. The Aponeuroſis covers and adheres very cloſely to the lower Part of the *Longiſſimus Dorſi*, and where it is fixed to the *Os Sacrum*, it is a little covered by ſome Inſertions of the *Glutæus Maximus.*

From thence this Muſcle runs upward, and a little laterally, over all the *Regio-Lumbaris*, the Aponeuroſis ſending off from its Inſide a Maſs of fleſhy Fibres, which are divided from below upwards, into ſeveral large Faſciculi inſerted in all the tranſverſe Apophyſes of the Loins.

Afterwards it runs up obliquely over all the Ribs, ſometimes as high as the two or three loweſt Vertebræ of the Neck, ſometimes higher, and ſometimes it ends at the firſt Vertebra of the Back.

Through all this Extent the Side of the Muſcle next the *Longiſſimus Dorſi*, or Vertebræ, is very even; but that next the Ribs is divided into ſeveral Portions, in an oblique Diſpoſition from below upwards, reſembling in ſome meaſure the Branch of a Palm-Tree. Theſe Portions or Digitations are fixed in the tranſverſe Apophyſes of the Neck, in the Tuberoſity of the firſt Rib, in the lower Part of the angular Impreſſions of the ten following Ribs, and near the Extremity of the laſt Rib.

This Digitation belonging to the laſt Rib is broad, and more fleſhy than tendinous. Thoſe of the other Ribs are tendinous, flat and narrow, and thoſe of the Neck are ſomething fleſhy, but very ſlender. The moſt ſuperior Portions are longer and narrower than thoſe below them, they growing gradually ſhorter and broader as they deſcend.

In diſſecting this Muſcle with Care, between theſe Portions

and

and the Ribs, we meet with ſeveral long thin muſcular Faſciculi, which croſſing the Portions, and adhering to them, are afterwards fixed in the Ribs above and behind the Inſertions of the ſeveral Portions.

Theſe muſcular Faſciculi begin at the tranſverſe Apophyſes of the ſame Vertebræ of the Neck, from whence they run down and are fixed in the eight or nine following Ribs. Sometimes they paſs over ſeveral Ribs without being inſerted in them; but this varies in different Subjects, and ſometimes in the two Sides of the ſame Subject.

In this manner theſe Faſciculi form a particular Plane, which ſome take for the internal Portion of the *Sacro-Lumbaris*; others, after *Steno*, call it *Muſculus Acceſſorius Sacro-Lumbaris*. Some take it for a diſtinct Muſcle, calling it the *Cervicalis Deſcendens* of *Diemerbroeck*.

The two *Sacro-Lumbares* maintain the Back and the *Regio-Lumbaris* in their natural Situation when we ſtand or ſit; and by the Relaxation of their Fibres more or leſs, the Trunk is proportionably bent forward by the Weight of the Head and Breaſt. They alſo extend the Back and Loins in all Poſtures, keep them ſteddy and fixed under the Weight of Burdens, and bend the Loins backward.

One of them acting alone, may have the ſame Uſes of bending forward, extending, reſiſting, and bending backward, but with leſs Strength, and in an oblique Direction, as when the Body is inclined obliquely forward, and to one Side at the ſame time, or extended from that Poſture. They alſo ſerve to counter-balance the oblique Muſcles of the Abdomen, in turning the Thorax upon the Pelvis.

Theſe Muſcles may in ſome reſpects be compared with the *Splenii*; that is, their ſuperior Inſertions with the Maſtoide Inſertions of the *Splenii*, and their inferior Inſertions with the vertebral Inſertions of theſe Muſcles. The Maſtoide-Portion of the *Splenius* is longer, more diſtant from the Articulation, and more diſpoſed to perform large Motions, and to reſiſt great Efforts than the vertebral Portion. In like manner, the Coſtal Portion of the *Sacro-Lumbaris*, by the Length of the tendinous Series, by their graduated Inſertions in the Ribs, and by their Obliquity, is better diſpoſed for the Uſes already mentioned than the vertebral Portion.

The ſmall muſcular Faſciculi which croſs theſe tendinous Portions, called *Muſculus Sacro-Lumbaris Acceſſorius*, ſeem to counterbalance and moderate the Depreſſion of the Ribs in the great Efforts of the *Sacro Lumbaris*.

The Uſe of theſe Muſcles in progreſſive Motion, is not ſufficiently demonſtrated. It is ſuppoſed that while we liſt one Leg to make a Step, the *Sacro-Lumbaris* of the other Side ſuſtains the Vertebræ of the Loins and Back, to prevent their yielding to the *Pſoas* which liſts the Leg, and puts it in Motion; but the Direction of the greateſt Part of the Fibres of the *Sacro-Lumbaris* is very improper for ſuch an Uſe.

The Uſe of the *Sacro-Lumbaris* in Reſpiration is alſo attended with Difficulties; for when the Body is very much inclined forward, and even much loaded, the Ribs continue ſtill to be raiſed with the ſame Eaſe as they are depreſſed, tho' the *Sacro-Lumbaris* is principally employed in this Caſe; but it is to be remembered that I ſpeak here only of bending and loading the Back, not of loading the Shoulders. In the firſt Caſe, the Ribs move eaſily, but not in the ſecond. *Winſlow's Anatomy*.

SACTIM. Vitriol. *Rulandus*.

SADIR. The ſame as SCORIA. *Rulandus*.

SÆPÆ. Large eroding Puſtules. *Caſtellus*, from *Foeſius*.

SAFFATUM, is, according to *Johnſon*, a Species of Salt, but he does not explain what.

SAGADENON. σαγαδηνον. A Name for the beſt Species of Opobalſamum, which *Galen*, *de Antidot*. L. 1. C. 4. ſays, was produced in *Paleſtine*.

SAGAPENUM. Offic. C. B. P. 494. Raii Hiſt. 1. 1844. Schrod. 214. Park. Theat. 1544. Ger. 898. Emac. 1056. Mill. Bot. Offic. 384. *Sagapenum Veterum*. J. B. 3. 156.

This is a Gum flowing, as is ſuppoſed, from a Species of Ferula, which grows, according to *Dioſcorides*, in the Country of *Media*, though it comes to us from *Alexandria*. It is of a reddiſh-brown Colour, made up of Drops uſually clung and clotted together, of a ſomewhat clear horny Colour in the Inſide, a little like Aſſa Fœtida, but harder, with ſomewhat of the Garlick Smell. We ſometimes ſee it in ſmall Drops not clotted together, of a light yellowiſh brown Colour; but this is not often to be met with.

Sagapenum is opening and attenuating, cleanſing the Breaſt of tough Phlegm, helping the Aſthma and Difficulty of Breathing. It is likewiſe good for the Dropſy, promotes the menſtrual Evacuation, and prevents hyſteric Diſorders. Outwardly applied, it helps hard Tumors and Swellings. *Miller's Bot. Off.* See FERULA MAJOR, ſeu FÆMINA PLINII.

This Gum is imported from *Alexandria*. That is moſt eſteemed which is pure, pellucid, on the Outſide of a fallow, or browniſh Colour externally, but within whitiſh; of an acrid Taſte, and ſtrong Smell like Garlick. It is attenuating and opening, and purges off viſcid and ſerous Humours, lodged in the Stomach, Inteſtines, Uterus, Kidneys, Brain, Nerves, the Joints and Breaſt. Hence it is ſerviceable in a Dropſy, inveterate Cough, Aſthma, Head-Ach, Convulſions, Epilepſy, Palſy, Tremors of the Limbs, Obſtructions and Tumors of the Spleen, and Cholic. It provokes the Menſes, and excites Urine; but deſtroys the Fœtus. *Schroder*.

SAGDA. The Name of a Gem mentioned by *Pliny*, *L.* 37. *Cap.* 10. of a green Colour, which he informs us, the *Chaldæans* find adhering to Ships. In *Samo-Thracia*, he farther tells us, a light black Gem is found, reſembling Wood, which bears the ſame Name.

SAGIMEN VITRI. Alcaline Salt. *Rulandus*.

SAGITTA.

The Characters are;

The Root is fibrous, thick, fungous and creeping. The Leaves at firſt reſemble thoſe of Plantain, but afterwards the bearded Head of an Arrow; the Stalk is juſt as uſual in umbelliferous Plants; the Flower is tripetalous, like that of the *Plantago Aquatica*; and the Fruit conſiſts of a Collection of Seeds like a Strawberry.

Boerhaave mentions four Sorts of *Sagitta*, which are;

Sagitta; aquatica; major. *C. B.* 194. *Ranunculus, paluſtris, folio ſagittato, maximo*. T. 292.

2. Sagitta; aquatica; minor; latifolia. *C. B. P.* 194. *Boerh. Ind. A.* 46. *Sagitta*, Offic. J. B. 3. 789 Raii Synop. 3. 258. *Sagitta minor*, Ejuſd. Hiſt. 1. 619. *Sagittaria minor latifolia*, Park. Theat. 1247. *Ranunculus, paluſtris, folio ſagittato minori*, Tourn. Inſt. 292. ARROW-HEAD.

It grows in Brooks and Waters, flowers in *May* and *June*, and the Parts in Uſe are the Herb and Seed. It is, ſays *Matthiolus*, of a cold and moiſt Temperament, and has the ſame Virtues as the *Plantago Aquatica*.

3. Sagitta; aquatica; minor; anguſtifolia. *C. B. P.* 194. *Ranunculus, paluſtris, folio ſagittato, anguſtiori*, T. 292.

4. Sagitta; aquatica; major; folio anguſtiore.

It has the Virtues of the *Plantago Aquatica*, but the Smell and Taſte ſhew it to be of a heating Quality. *Hiſt. Plant. aſcript. Boerhaave*.

SAGITTALIS SUTURA. The Sagittal Suture of the *Cranium*. See CAPUT.

SAGITTARIA. The ſame as SAGITTA.

SAGITTARIA ALEXIPHARMICA. Offic. *Canna Indica, radice alba, Alexipharmica*. Raii Hiſt. 3. 573. *Arundo Indica, anguſtifolia, flore rutilo, pediculis donata*, Hiſt. Oxon. 3. 250. *Agutiguepoobi Braſilienſibus*, Raii Hiſt. 2. 1203. *Radix quædam in Malaca, quæ adverſus vulnera Sagittis toxico illitis facta, præſentaneum remedium eſt Garzias*, C. B. P. 301. *Radix Malaca quædam toxicis Sagittis reſiſtens*, J. B. 2. 173. ARROW-ROOT, DART-WORT.

This Plant has a Root two or three Inches in Length, geniculated, of the Thickneſs of a Man's Thumb, white, and of a conic Figure, every Interpode or Space between the Joints being half an Inch in Length, and every Joint ſending forth ſeveral Fibres two or three Inches long, for attracting Nouriſhment. From the Root ariſe various Leaves on Pedicles three Inches in Length, and of a good Breadth, embracing one another, or the outer ones wrapping themſelves about the inner, and ſurrounded with a white Ring at the Place of Appoſition. The Leaves are four Inches long, and two Inches broad near the round Baſe where they are broadeſt, and are thin, fibrous, and graſſy, and of a greeniſh-yellow Colour. In other Reſpects it is like the *Canna Indica*.

Sir *Hans Sloane* obſerved this Plant in the Gardens of *Jamaica* and the *Charibbee* Iſlands. It was tranſplanted to *Jamaica* from the Iſland of *Dominica*, and is highly valued on account of its alexipharmic Virtue, and its Efficacy againſt Wounds inflicted by poiſoned Darts and Arrows; for which purpoſe it is frequently uſed by the *Indians*, who bruiſe the Herb, and apply it to the injur'd Place. *Raii Hiſt. Plant.*

SAGMINALIS HERBA. Vervain. See VERBENA.

SAGOU. See *Palma, Japonica; ſpinoſis pediculis; Polypodii folio*.

SAGZENEA. A Name for two Medicines deſcribed by *Avicenna*, the greater and the leſs, which are recommended againſt cold Diſorders of the Stomach, Inteſtines, and Uterus.

SAHAFATUM, or SAHAFATI. The ſame as ACHOR.

SAHARA. The ſame as PERVIGILIUM.

SAIC. Quickſilver.

SAIRE. The ſame as ESSERE.

SAKMUNIA. The Arabic Name for Scammony.

SAL. Salt. For an Account of Salt, conſidered as a Chymical Principal. See PRINCIPIA, and ACIDULÆ.

A Salt is, by *Geoffrey*, defined to be a ſolid, friable, pellucid and ſapid Mineral Body, diſſoluble in Water, fuſible by Fire, and eaſily concreſcible in Form of Chryſtals. This Definition agrees to alimentary Salt, Nitre, Vitriol, Alum, Sal-Ammoniac, and Borax.

OF ALIMENTARY SALT.

Alimentary Salt, or that which is uſed in Food, is diſtinguiſhable from all other ſaline Bodies by the cubical Figure of its Cryſtals, which it retains even in the leaſt Particles, which are the Objects of Senſe. It is of two Kinds, being either dug out of the Earth, from whence it is called Foſſile Salt, or Sal Gem; or prepared by evaporating the Sea-Water, being from thence termed Sea-Salt; or by evaporating the Water of Salt-Springs.

OF FOSSILE SALT OR SAL-GEM.

*There are ſeveral Kinds of this foſſile alimentary Salt, diffe*ring from each other only in their Colour, which is white, grey, of a yellowiſh red, or pellucid like Chryſtal; which laſt, moſt properly called Sal-Gem, is preferred to all the reſt, as being judged moſt pure. It is of an octagonal or cubical Figure, and ſalt Taſte, pellucid like a Gem, and often reſembles Cryſtal, both in Colour and Brightneſs. In the Mountains of *Catalonia*, near the City of *Cardona*, and alſo in deep Mines in *Poland* near *Cracow*, huge Rocks of this Salt are found, and they beat them to pieces with proper Inſtruments of Iron.

The Virtues of Sal-Gem are the ſame as thoſe of Sea-Salt. This Salt is uſed as a Stimulus in Clyſters and Suppoſitories given to ſoften and evacuate the indurated Fæces, in this or the like Manner:

Take of deſpumated Honey two Ounces; Sal Gem, a Dram and a half; boil them to a due Conſiſtence for a Suppoſitory. Or, take of Honey, boiled to a due Conſiſtence, one Ounce; Sal Gem, and Species of Hiera, of each half a Dram, Diagridium, fourteen Grains; mix and make them into a Suppoſitory.

Take of the Root of *Spaniſh* Pillitory half an Ounce; Leaves of Marjoram and Rue, of each one Handful; Leaves of Senna, Agaric, and the Pulp of Coloquintida, of each two Drams, boil in a ſufficient Quantity of common Water to twelve Ounces, of ſtrained Liquor, in which diſſolve of Sal Gem two Drams, and add of Emetic or Antimonial Wine, three Ounces, for a Clyſter in Apoplexies, and other ſleepy Diſeaſes.

In theſe Affections even the ſtrongeſt and moſt ſtimulating Clyſters are ſometimes of no Effect, becauſe the Inteſtines are become paralytic; and they are never to be uſed in an Inflammation of the Inteſtines. The Chymical Preparations of Sal Gem are the ſame as thoſe of Sea-Salt. *Geoffroy.*

Foſſile Salt is dug out of very deep Mines in *Tranſylvania*, *Hungary*, *Ruſſia*, *Siberia*, *Tartary*, and many Places in *Germany*. But the moſt remarkable Salt Mines are thoſe of *Bochna* and *Viliſke*, not far from *Cracow* in *Poland*.

The Salt Mines near the ſmall Town of *Viliſke*, which (the Church excepted) is altogether dug hollow under Ground, have four Deſcents; of which the two principal being in the Town itſelf, are thoſe through which the Salt is drawn up; the other two ſerve for letting down Timber and other Neceſſaries. Theſe Deſcents or Holes are four or five Foot ſquare, lined all the Way downwards with Timber. Above is a great Wheel, with a ſtrong Rope of the Thickneſs of a luſty Arm, drawn about by a Horſe, like as in a Horſe-mill.

He that will deſcend, muſt cover himſelf with a Frock, and have another Man that faſtens another Rope to the aforeſaid big Rope, and having ſo tied it about himſelf as to ſit in it, he takes him in his Lap, and holds him faſt about; whereupon the big Rope being ſomewhat let down, another faſtens likewiſe a Piece of Rope to the other thick Rope, and does like the former, ſeating himſelf in it, and taking and claſping another Man in his Lap, and being alſo let down a little Way, gives Place to others to do the like; in which manner, thirty, forty, and more Perſons, may be let down all at once; of whom the firſt having touched the Ground, ſteps out and goes aſide, the reſt following him, and doing the like; and thus they deſcend to the Depth of a hundred Fathoms. But then they take a Lamp, and lead People about by ſtrange Paſſages and Meanders, ſtill more and more deſcending, till they come to certain Ladders, by which they go down an hundred Fathoms deeper, where there are double Paſſages and Holes, one above another, in Abundance; for the Mine-men dig on ſtill, and cut out every where, and on all Sides, as long as the Salt Vein laſts. The great Holes, to ſecure both the Town above, and the Work below from falling in, are carefully ſupported by ſtrong and well-compacted Timber.

Theſe Mines were firſt diſcovered in 1251. Within them is found a kind of ſubterraneous Republic, which has its Polity, Laws and Families, and even public Roads, Carriages, and Horſes for drawing the Salt to the Mouth of the Quarry, where it is taken up by Engines. Theſe Horſes, when once they are down, never ſee the Light again; but the Men take frequent Occaſions of breathing the Village Air. When a Traveller is arrived at the Bottom of this ſtrange Abyſs, where ſo many People are interred alive, and where ſo many are even born, and have never ſtirred out, he is ſurprized with a long Series of lofty Vaults, ſuſtained by huge Pilaſters cut with the Chiſſel, and which, being themſelves Rock-Salt, appear, by the Light of Flambeaux, which are inceſſantly burning, as ſo many Cryſtals or precious Stones, of various Colours, ſhedding a Luſtre almoſt intolerable to the Eye.

The Rocks of Salt are hewn in the Form of huge Cylinders; the Workmen uſing Hammers, Pick-axes, and Chiſſels, *much as in our Stone-Quarries, to ſeparate the ſeveral* Banks of Stone. As ſoon as the maſſive Pieces are got out of the Quarry, they break them into Fragments, fit to be thrown into the Mill, where they are ground and reduced to a coarſe Farina or Flower, which ſerves all the Uſes of Sea-Salt.

In theſe Mines there are three Kinds of Sal Gemmæ, one is common, coarſe and black; the ſecond ſomewhat finer and whiter; the third very white, hard and tranſparent, which laſt is the Sal Gemmæ of the Druggiſts and Dyers. It cuts like Cryſtal, and is frequently uſed for Toys, Chaplets, little Vaſes, and the like; the other Sorts are leſs compact, and only fit for Kitchen Uſes. The coarſe and black Salt is cut out in great Pieces, roundiſh, and three *Polonian* Ells long, and one Ell thick, which are ſold from fifty to ſeventy *Polonian* Florins.

The greateſt Pieces lie before their Doors, where they are lick'd by the Cattle as they paſs. The Colour of theſe Salt-Stones is darkiſh grey, with ſome Mixture of yellow.

But the principal Wonder of the Place is, that through theſe Mountains of Salt, and along the Middle of the Mine, there runs a Rivulet of Freſh-water, ſufficient to ſupply the Inhabitants.

The Imperial Salt-works at *Soowar*, near *Eper* in *Upper Hungary*, are alſo remarkable for many curious Particulars; of which Dr. *Bruckman* gives the following Account. They are at leaſt an hundred and forty Fathoms deep. In the Cuts of them, one ſometimes finds Alleys of Rock-Salt, of the moſt delicate blue and yellow Colours. He obſerved, that the firſt Colour being expoſed to the Sun for ſome Days, loſt entirely that beautiful Ultra-marine, and became white as the other Rock-Salt, which did not happen to the yellow, which preſerved its Colour; but when you pound them together, the Salt was neither blue nor yellow, but extremely white.

Meliſſantes, in his Geography, ſpeaking of Salt-works which the *Spaniards* have in *Catalonia*, ſays, that there is Rock-Salt, the Colour of which is ſo diverſified, that it comes near the Rain-bow, in having green, red, yellow, and blue Colours; but that, by firſt preparing, and then grinding it, it became white. The ſame happens alſo to the red Rock-Salt of *Saltzburg*, which being pounded becomes white.

But one Thing very remarkable, in the Mines of *Soowar*, is a Chapel, which can eaſily contain a hundred People, cut in the Rock-Salt, with an Altar, a Pulpit, a Sacriſty, Chairs and Forms cut in the ſame Rock. They celebrate once every Year, the Week after *Epiphany*, divine Service in this Chapel, and the Sermon is always preached by a Jeſuit of *Eper*. This Service was founded for the Officers of the Exciſe and the Miners.

But that which is moſt curious in theſe ſubterraneous Foſſes, are the Flowers of Salt, which grow as the Beard of a Goat, with this Difference only, that theſe are much whiter and finer. One cannot enough admire theſe Efferveſcences, which ſeem to vegetate, yet one cannot find them in all the Cuts, nor at all Times, but they appear and grow according to the Temperature of the Seaſons, which in thoſe Parts is very wholeſome. Theſe Sort of Plumes of Salt are very brittle, they melt alſo in moiſt Places, and diſſolve into an Oil; but are nevertheleſs the moſt pure Salt, the fineſt, the moſt acid, the whiteſt and moſt beautiful; ſo that it is not without Reaſon they have given it the Name of the Flower of Salt.

At *Neuſol*, there is a Statue of Rock-Salt, as large as the Life, which ſerves as the Barometer of the Town; for when it begins to ſweat or grow moiſt, it preſages Rain or wet Weather; but when it is dry you may certainly promiſe yourſelf ſettled Fair.

There are alſo ſeveral Salt-mines in *England*, about the *Wyches* in *Cheſhire*.

OF SEA-SALT.

The artificial Sea-Salt is obtained by the Heat of the Sun, or by Coction from Sea-Water, or Salt Springs or Wells. In *Britany* in *France*, the Manner of making Sea-Salt is, to dig ſhallow broad Trenches, which are lined with Clay. Theſe being filled with Sea-Water by the Tide, the Heat of the Sun evaporates the Water, and a large Proportion of Salt remains behind. In *Normandy* they make ſmall Heaps of Sand upon the Shore, which imbibe the Sea-Water, and the inſipid Humidity being afterwards evaporated by the Heat of the Sun, the Salt remains among the Sand. To ſeparate it, they firſt boil it in freſh Water, and then having ſtrained off the Lixivium, containing now only a Solution of Salt in freſh Water, they boil it again with a gentle Heat in leaden Cauldrons, to a certain Degree of Thickneſs; then putting out the Fire, the Salt chryſtallizes.

Salt is made from Salt Fountains likewiſe, by boiling the Water till the Humidity exhales; and whilſt it is boiling, they mix with it either Gall or Bullocks Blood, which makes the Salt form itſelf more eaſily into larger Lumps; for the Parts of the Gall or Blood inviſcate or entangle the bituminous or earthy Parts, which hinder the Concretion of the Salt, and are altogether thrown up as a Scum, or at leaſt remain in the Strainers. Sea-Salt, prepared by the Heat of the Sun, is preferable both for culinary and officinal Uſes. The Taſte of it is well known; the Colour is greyiſh, becauſe of the Particles of Earth mixed with it; but if it be diſſolved and chryſtallized by a gentle Heat, it is formed into very white cubical Grains. Salt made by boiling is white, but the Grains thereof are not exactly cubical, becauſe of ſome Mixture of different Salts.

Before Sea-Salt has felt the Fire, it changes neither the Syrup of Violets, nor Tincture of Heliotropium, it makes no Effervеſcence with the Oil of Tartar per Deliquium, but diſcovers, however, ſome ſmall Signs of Acidity. It leſſens the Tranſparency of the urinous Spirit of Sal-Ammoniac, and darkens the Colour of the Infuſion of Gall. By other Trials it ſeems likewiſe to diſcover an alcaline Nature; for it turns a Solution of corroſive Sublimate white, and makes an hot Effervеſcence with Oil of Vitriol. A Solution of Salt in Water being evaporated to a Pellicle, and then ſet in a cool Place, the greateſt Part of it will be formed into cubical Chryſtals; but the Remainder cannot be brought to concrete without Heat; and even then it is formed into no regular Figure, and ſoon runs per Deliquium in the moiſt Air. Hence it is evident, that Sea-Salt is made of an Acid of a peculiar Kind, and of a mineral Alcali, and that the acid Portion is ſo far entangled and involved in the other, as hardly to be able to exert its proper Virtues in a concrete Form.

From Sea-Salt, by Diſtillation in a Retort, we obtain an acid Spirit, which turns the blue Tincture of Heliotropium into a purple Colour, and ferments vehemently with Oil of Tartar, but without any ſenſible Heat; but does not raiſe any Effervеſcence with Lime-Water. This acid Spirit is the only Diſſolvent of Gold and Tin, but cannot diſſolve Silver or Lead; and it communicates this Quality to Spirit of Nitre and of Vitriol; which, by being mixed with it, becomes *Aqua Regia*. If this Spirit, when very pure, be ſaturated with the alcaline Salt of Tartar, it concretes into a *Sal Salſus*, reſembling Sea-Salt in Taſte, and in the cubical Figure of its Cryſtals; whence it appears that Sea-Salt is an Acid perfectly ſaturated with an alcaline Salt. The Chryſtals of Sea-Salt crackle and crepitate in the Fire.

Its Virtues are, to check too great Fermentation, and prevent Putrefaction; and for that Reaſon, it is uſed by Chymiſts for macerating Plants, to keep them from rotting; and what it does to Plants in macerating, is not different from its Effects on the Aliment in the Stomach; where it both checks too great Fermentation, and prevents Putrefaction. It likewiſe calms the too great Ebullition of the other Fluids of the Body; and, as it readily joins with volatile urinous Salts, and changes them into a Sal-Ammoniac, it is fitted to ſoften the Acrimony of the Fluids, and promote the Depuration thereof by Urine. By its little Points it likewiſe ſtimulates gently the ſolid Parts, and thereby increaſes their oſcillatory Motion, by which Means all the Functions of the Body are better performed. On theſe Foundations are built all the Virtues aſcribed to Sea-Salt, of drying, heating, deterging, digeſting, opening, attenuating, increaſing the Appetite, exciting to Venery, and of reſiſting Poiſons and Putrefaction.

It is ordered in an *Apepſia*, or want of Digeſtion, in want of Appetite, in Coſtiveneſs, and Obſtructions of Urine, and is an Ingredient in the *Unguentum Emulatum*. It is much eſteemed by the Chymiſts, as being the only Menſtruum for Gold. *Geoffroy*.

ANALYSIS OF SALT.

Take any Quantity of Salt, procured either from the Rock, Sea-water, or briny Springs, and as pure as poſſible; diſſolve it in a ſufficient Quantity of Water, and digeſt it for a long Time, in a Veſſel ſo cloſely ſtop'd, that none of the Water may evaporate; and, by theſe Means, an inſipid Earth will fall to the Bottom, which cannot again be diſſolved in Water. Pour off the clear Liquor, and let it evaporate in a Place free from Duſt, till a Pellicle or Scum like a thin Skin appears on the Top; and then ſet it in a cool Place, and the Salt will ſhoot into tranſparent Chryſtals of the Figure of a Cube or Dye. Pour off the clear Water from the Cryſtals, and evaporate again to a Pellicle, and ſet it in a cool Place, as before, and more Chryſtals will be formed, but leſs pure and tranſparent than the former. Repeat this Evaporation and chryſtallization ſo long as any Chryſtals will ſhoot, and then an oily, ſaline Liquor will remain, which is not rendered dry without a good deal of Difficulty, and a conſiderable Heat long continued. After this has been evaporated to Dryneſs, it will attract the Moiſture of the Air, and run into an Oil *per Deliquium*, more readily than any other Subſtance whatever, and then lets fall a ſmall Quantity of inſipid Earth not diſſolvable by Water; dry the remaining Oil and calcine it, then expoſe it to the Air till it runs again into an Oil, which will let fall more inſipid Earth. If theſe Calcinations and Solutions are repeated a ſufficient Number of Times, nothing will be left at laſt but pure inſipid Earth, of which there will be a pretty large Quantity, if all that is left after each Solution be collected together. All the other Parts being rendered volatile fly off into the Air.

By the Analyſis of Salt it appears that common Salt conſiſts of a pure inſipid Earth, an acid Spirit extremely volatile, and Water; and it is highly probable that this Earth, before it was united to the acid volatile Spirit, was of an alcaline Nature, and perhaps exactly the ſame with the *Natron* of the Ancients. What makes this the more likely is, that if any fixed alcaline Salt is impregnated with the acid Spirit of common Salt, a Salt will be formed very nearly the ſame with common Salt, which the Chymiſts call regenerated Salt.

Common Salt has many very extraordinary Properties.

1. The ſmalleſt Chryſtals of common Salt are always of a cubic Figure, that is the Figure of a Dye.

2. Upon the Application of Fire to it, it crackles. This Decrepitation or Crackling of Salt, ſeems to proceed from the Air contained in its Pores, which being rarified by the Fire, breaks its Priſon and makes its Eſcape.

3. Spirit of Salt is the only Thing in Nature that will diſſolve Gold; but not without being joined with the Spirit of Nitre.

4. Salt preſerves all vegetable and animal Subſtances from Putrefaction, as alſo Water, and is itſelf incorruptible. This Property it entirely owes to the Acid it contains.

5. A greater Quantity of common Salt will be diſſolved in a given Quantity of Water, than of any other Salt whatever; for ſix Ounces of common Salt may be diſſolved in ſixteen of Water; but it muſt be obſerved, that warm Water will diſſolve more Salt than cold, and that in Proportion to the Heat of the Water. Thus Water in that Degree of Heat which makes it boil, diſſolves more Salt than in any leſs Degree of Heat, inſomuch, that as it grows cool, it will every Moment let fall more and more of the Salt which was diſſolved in it, which will appear at the Bottom of the containing Veſſel undiſſolved; and when the Water is ſo cold as to freeze, it will expel almoſt all the Salt, which will ſtick to the Bottom of the Ice in a ſolid Form.

6. Salt diſſolved in Water of a Heat equal to that of the Atmoſphere, renders the Water conſiderably colder. And yet,

7. Notwithſtanding this Increaſe of Coldneſs, the Salt will keep the Water from freezing, inſomuch that Water, wherein Salt is diſſolved, ſhall not freeze near ſo ſoon as pure Water: And hence we may obſerve, that Salt, when interpoſed between the ſmall Particles of Water, has the Power of preventing their Aſſociation, that is, their Concretion into Ice; otherwiſe Salt, by increaſing Cold, would promote Freezing.

8. If Spirit of Salt is poured upon Ice reduced to Powder, it will increaſe the Coldneſs thereof to a ſurprizing Degree; to a Degree much greater than ever was produced naturally, and in which every Animal muſt die.

9. Salt thrown upon burning Coals greatly increaſes their Heat. This proceeds from the Air, Water and Acid contained in the Body of the Salt; for the Air being forced out of the Salt by Heat, acts upon the Fuel like a Pair of Bellows; and that this will increaſe the Heat of Fire is known to all Smiths, who, when they would make their Fires intenſely hot, frequently ſprinkle Water upon the burning Coals.

10. Salt

10. Salt made extremely dry, attracts the Moiſture of the Air conſiderably, even in the dryeſt Seaſons, inſomuch that it is a common Thing for People who deal in Salt, to buy it at the *Wyches* very dry, and to ſell it a great many Miles diſtant, for leſs *per* Hundred than it coſt them; yet are they conſiderable Gainers, becauſe the ſame Quantity of Salt that weighs a Hundred at the *Wyches*, will be much heavier, after having imbibed the Moiſture of the Air.

With reſpect to theſe Properties of Salts, it may be remarked, that as Putrefaction is, always, in Proportion to Heat, that vaſt Body of Water, which we call the Sea, would putrefy and ſtink, (as we find, in effect, freſh and ſtagnating Waters do) eſpecially in hot Climates and calm Weather. Now this Putrefaction would be fatal not only to all the Animals contained in the Sea, but alſo to thoſe Land Animals that came within the Influence of the Vapours ariſing from this vaſt Body of putrefying Waters, which probably would be all Animals upon the Face of the Earth.

Now we find, by the fourth Property of Salt, that it preſerves all vegetable and animal Subſtances from Putrefaction, as alſo Water; and that there is a great Quantity of this Salt in the Sea, is a Propoſition unneceſſary to be proved.

By Property the fifth, we find, that a greater Quantity of Salt will be diſſolved in warm Water than in cold; and by this it ſhould ſeem, that more Salt ſhould be diſſolved in hot Climates, and in hot Weather, where there is more Occaſion for it to guard againſt Putrefaction, than in cold Climates and cold Weather, where there is leſs Occaſion for it; accordingly we find, by repeated Experience, that in the *Mediterranean* Sea, where the Climate is hot, one Pint of Water contains an Ounce of Salt; but in the *Baltick*, where the Climate is cold, the ſame Quantity of Water contains only half an Ounce. 'Tis as certain, that under the Equator, the Sea-Water contains ſtill a greater Proportion of Salt, and thoſe Seas that lie more Northward than the *Baltick*, a leſs.

Agreeable to this is an Obſervation made by a Friend of Mr. *Boyle*, at his Deſire, who found, by a Glaſs Inſtrument made on Purpoſe, that the Sea-Water increaſed in Weight, and conſequently in Saltneſs, the nearer he approached the Line.

The ſame Author farther informs us, that at *Manar*, near the great Cape of *Comori*, where the famous Pearl-Fiſhing is carried on, and the Climate is very warm, the Ocean is ſo ſalt as to depoſite a good Quantity at the Bottom in hard Lumps.

We learn farther, from Property the ſixth, that Salt renders Water, wherein it is diſſolved, colder than it would otherwiſe be. Now, as Putrefaction is in Proportion to Heat, this Property muſt alſo guard againſt Putrefaction in hot Climates, and in hot Seaſons.

Dr. *Halley*, in the Philoſophical Tranſactions, has a Diſſertation, to ſhew, that as Salt is perpetually conveyed to the Sea by Rivers, the Sea muſt daily acquire a greater Degree of Saltneſs; inſomuch, that if we had any authentic Obſervations relative to the Degree of Saltneſs of the Sea, made at diſtant Periods of Time, we might from theſe calculate the Age of the World.

But if there is any Truth in theſe Obſervations I have made above with reſpect to the Saltneſs of the Sea, as there undoubtedly is, Dr. *Halley*'s Syſtem, however pretty and ingenious, muſt entirely fall to the ground; as the Reader will eaſily perceive, if he conſiders, that the Sea was, in all probability, as ſalt a Fortnight after the Fall of *Adam* as at this time, ſince the Neceſſity and Convenience of it were as great then as now: And it is very unlikely that the Almighty ſhould create his Works imperfect, and leave them to be brought to Perfection by a long Series of Time.

I muſt add, that although Salt is incorruptible, yet it is capable of being ſo far deſtroyed, as to remain no longer in the Form of Salt; as appears by its Analyſis. Now, though what the Doctor ſays be true, that Salt is perpetually brought into the Ocean by Rivers, and that the Exhalations of Water from the Sea are perfectly freſh, yet the Conſequence which he thence draws, that the Sea grows every Age more ſalt, may not be true; for it is highly probable that Salt, by the alternate Actions of other Bodies upon it, may undergo ſuch a Sort of Tranſmutation, as we have above deſcribed in its Analyſis; and then the volatile Parts, which conſtitute the ſpecific Nature thereof, and render the fixed Part, or Earth, diſſolvable in Water, being diſunited from the fixing Earth, may very likely fly off, and mix with the Air; and then the fixing Earth, now no longer diſſolvable in Water, will ſink by its own Gravity to the Bottom. And if we conſider (as Sir *Iſaac Newton* obſerves) that Nature delights in Tranſmutations, it will appear more probable, that there is a perpetual Generation and Diſſolution of Salt carrying on in the World.

Before Sea-Salt is diſtilled, ſome Preparations are neceſſary, and eſpecially Calcination or Decrepitation; for ſince the

Grains of Salt fly and crackle in the Fire, they would burſt all the Veſſels uſed in the Diſtillation, except the watery Fluid, with which they abound, was firſt carried off by Calcination. This Decrepitation ariſes from the watery Fluid contained and incloſed between the Particles of the Salt, which being diſſolved by the Heat, burſt the Priſon wherein they were detained, ſeparating the Particles that ſurround them with a kind of Exploſion. The Decrepitation or Calcination of Salt is performed in this Manner:

The Salt is ſet on lighted Charcoal, in an open earthen Veſſel, and ſtirred conſtantly with an Iron Spatula. As ſoon as the Salt begins to be thoroughly heated, it makes a crackling Noiſe, which increaſes for ſome time, and then ceaſes altogether. When all the Noiſe is over, the Salt is decrepitated, calcined, dried and burnt, and remains in the Veſſel in Form of a Powder. This decrepitated Salt ſerves for cementing Minerals or Metals, for the Diſtillation of Spirit of Salt, and for many other chymical Operations.

THE DEPURATION AND CRYSTALLIZATION OF SEA-SALT.

Diſſolve common Sea-Salt in ſix times its Quantity of Rain-Water, ſtrain the Solution hot through a cloſe Linen-Bag, ſo often as to render it perfectly limpid; then exhale away in a Glaſs-Veſſel one ſixth Part of the Water; ſet the Remainder in a quiet cool Place for three Days, in a Veſſel covered to keep out the Duſt; if it depoſites any Fæces, pour off the Liquor from them by gently inclining the Veſſel; if it depoſites none, the Liquor is perfect, and may now be evaporated to a Pellicule: Again ſet it in a cool quiet Place for twenty four Hours, during which time it will ſhoot into cubical Cryſtals. Carefully pour off the Liquor remaining after Cryſtallization, dry the Salt with a gentle Heat, and keep it ſeparate. This is the Salt that I commonly employ for chymical Uſes. Let the remaining Solution be again evaporated to a Pellicle, and ſet to ſhoot as before. By thus continuing to repeat the Operation, the Liquor will at laſt become thick, unctuous, auſtere, and hard to dry, and ſcarce afford any Cryſtals. If the Salt thus purified be decrepitated in the Fire, and afterwards fuſed with a ſtrong Heat, then poured out upon a dry Marble, it reſolves in the Air, and depoſites earthy Fæces; from which the Liquor being carefully ſeparated, then inſpiſſated, calcined, poured out, and ſuffered to run in the Air; the Operation being thus repeated, the Salt at length vaniſhes into the Air, as a very ancient chymical Writer has truly obſerved.

REMARKS.

Cryſtallization is the only Method of procuring Salts pure and ſimple, when their innate Virtue, whilſt the Salts are diluted with a certain Proportion of Water, unites the ſimilar Parts together, and ſeparates the diſſimilar; and the Water, being attracted more by one Salt than another, one Salt ſooner extricates itſelf than the other. And unleſs Salts be thus previouſly depurated, it is in vain to expect they ſhould afford pure Spirits, which are neceſſary to certain Operations. If any Sea-Salt were in Nitre, the Nitre, upon Diſtillation, would afford not an Aqua-fortis, but an Aqua-Regia; and the ſame holds true of Sea-Salt, if any Nitre be mixed among it. The Salt thus obtained is ſuch a Diſſolvent of Gold, that, without its Addition, Gold can no otherwiſe be diſſolved, except by fuſing with Metals. This Salt is a wonderful Preſervative, by means whereof all the Parts of Animals and Vegetables are preſerv'd from Putrefaction.

GLAUBER'S SPIRIT OF SEA-SALT.

1. To three Parts of Sea-Salt, prepared as above, and put into a Glaſs-Retort, pour one Part of the ſtrongeſt Oil of Vitriol, at the Inſtant they mix, a volatile white Vapour riſes, which is to be carefully avoided, as being ſuffocating, and capable, if but once drawn in with the Breath, to ſtop the Action of the Lungs irremediably. Directly apply a large and cold Glaſs-Receiver, lute the Juncture, apply a very ſmall Quantity of Fire at firſt, for a furious Spirit will long continue to come over ſo as to blow through the Luting, or break the Veſſel; ſo that the Fire muſt be kept gentle for three or four Hours: Then increaſe it a little, and a leſs volatile Liquor will come over. After eight Hours have been employed upon the Operation, urge the Fire till the Iron-Pot becomes ignited, and no more Liquor riſes; then let all cool, and when the Neck of the Retort is no longer hot, take off the Receiver; the Liquor will fume; and beware of receiving the Fume in with the Breath. Pour it into a Glaſs well-fitted with a Glaſs-Stopper, and ſet it in a cold Place, otherwiſe

wiſe the Glaſs often burſts, by means of the Motion of the Vapour. If thus kept for Years, a white ſuffocating Vapour immediately breaks out upon opening the Veſſel; but if the Spirit thus produced be carefully diſtilled in a Glaſs-Body, under a Chimney, into a Receiver, the volatile Spirit will come over, while there remains at the Bottom a more fixed Liquor, of a Colour betwixt a yellow and a green. This Liquor remains quiet without exhaling, but that which comes over into the Receiver has a violent ſuffocating Volatility, and may be kept apart as a pure volatile Spirit of Salt in a cloſe Veſſel.

2. To three Parts of purified and dry Sea-Salt, put into a Retort, add two Parts of clean Rain-Water, and one Part of the ſtrongeſt Oil of Vitriol. Let the Oil of Vitriol fall in by ſlow Drops, to prevent the Burſting of the Veſſel, by the ſudden Heat that would riſe from mixing in the whole at once. The Mixture will grow hot, place the Retort in a Sand-Furnace, and apply a capacious Receiver; diſtil gently for the firſt four Hours, while the Water comes over ſlowly; otherwiſe, if made to riſe briſkly, it always cracks the Receiver. After this, increaſe the Fire gradually; the Spirit of Sea-Salt will come over, which is then known to riſe, when the Liquor runs in ſpiral Veins. Now raiſe the Fire, and gradually urge it, till at length the Iron-Pot grows of a red Heat, and no more Liquor comes over; at which time the Spirit will not fume. Then ſuffering all to cool, pour out the Spirit, which is now neither ſuffocating nor ſmoaking. If this be diſtilled again with a gentle Fire, in a Glaſs-Body, there will come over a limpid ungratefully acid Water, of excellent internal Uſe, being mixed with Juleps, in ſuch Diſtempers as require it; an excellent fat Spirit will remain in the Bottom, of a Colour betwixt green and yellow.

3. In both Caſes there will be left behind a very white and fixed Salt, that can only be fuſed with a violent Fire.

REMARKS.

It ſeems ſurpriſing that Oil of Vitriol ſhould raiſe ſo volatile a Spirit, by being barely poured upon ſo fixed a Salt as Sea-Salt; which Spirit is again fixed by adding fair Water to it, and is not generated when the Oil of Vitriol is mixed with a ſtrong Solution of Sea-Salt for Diſtillation; or again when the Oil of Vitriol is diluted with Water, and added to the Sea-Salt; in which three Ways this ſurpriſing and ſuffocating Volatility is fixed, and render'd unhurtful; but when the Spirit, thus fixed and render'd wholeſome, is urged with the Heat of a hundred Degrees, it lets go its Water, and remains rich, very fat, thick, gratefully acid, fragrant, and of a greeniſh Colour, and as perfect as can be any way obtained. But here again are certain Limits, for only one Part of the Salt is thus converted into acid Spirit, while the others remain fixed with the Oil of Vitriol. I could ſcarce gain more than a third Part of pure Spirit, ſeparable from the Water, in proportion to the Salt. This Spirit has ſome Properties in common with other Acids, and ſome particular. It is particularly grateful to the Stomach, excites the Appetite, attenuates mucous Humours, reſiſts Putrefaction, and corrects the Bile, when either too acrimonious, large in Quantity, or corrupted. It is of excellent Uſe in curing Gangrenes of the Gums, Mouth, or Tongue, it prevents the Generation of the Stone, and, according to *Helmont*, helps to diſſolve it. It is ſerviceable in the Strangury attending Old-Age. If the ſtrongeſt Spirit of Salt be mixed with thrice its Weight of Alcohol, and the two be thoroughly united together, by two or three Diſtillations, they make a volatile, oily, acid, fragrant, and balſamic Spirit of great Virtue. This acid Spirit diſſolves Gold when very ſtrong, or render'd more noble by being ſeveral times drawn over from Sea-Salt. In ſhort, this Liquor exceeds all that can be ſaid of it; and this is a highly uſeful Experiment, which we owe to the Induſtry of *Glauber*.

SPIRIT OF SEA-SALT WITH BOLE.

1. Take ſix Pounds of pure dry Sea-Salt, put it into two earthen long Necks, each of them containing three Pounds of Salt; put the long Necks into the Fire, and cover them with Tiles to prevent any thing falling in. Let the Fire be placed around them at ſome Diſtance firſt, and afterwards gradually nearer, and at length up to their Sides. The Salt will for a long time continue to crackle ſtrongly; but this Decrepitation at length ceaſes, when both the long Necks are thoroughly ignited. When the Fire is burnt down, the Salt is found white, pulverized, and will not crackle, when thrown into the Fire. It loſes always one Fourth in the Decrepitation, but ſeems otherwiſe unchanged, though it would eaſily grow moiſt in the Air. It is now fit for Diſtillation; wherein had it been employed without Decrepitation, the Action of the Fire would have made it leap into the Receiver, ſo as to diſturb the Operation, and ſometimes to burſt the Veſſels; but its wild crackling Spirit being drawn out by Calcination, it will afterwards calmly endure the Fire.

2. Take three Pounds of this Salt, as ſoon as it is decrepitated; grind it in a large hot Mortar, and preſently mix therewith ten Pounds of common red Bole; divide the Mixture into two Parts, and charge two Long-Necks therewith, ſo that the Matter may not come into the Mouths of the Veſſels, as they lie horizontally in the Furnace. Then fit them into the Reverberatory, building up the open Side of the Furnace with Bricks and Mortar, ſo as to leave the Necks of the Veſſels to come through the Wall. Apply Adopters and large Receivers, and alſo a gentle Fire, increaſed by Degrees for twenty-four Hours, that all may become thoroughly hot and dry. Then light up a ſtrong Fire in the Morning; a copious white Vapour will come over, like white Clouds, into the Receivers, and dewy Drops appear in the internal Surface thereof. Keep the Fire thus for two or three Hours; then increaſe it, upon which the Receivers uſually become clearer, and the Spirit runs in unctuous Veins. And now the Fire may be increaſed to the utmoſt Degree, and continued thus for ſix or eight Hours, that the Veſſels may be thoroughly ignited. When no more Spirit comes over, leave off; let all cool; carefully take away the Receivers, and empty the pure Liquor: It will be acid, gratefully fragrant, of a green Colour, and in the Quantity of about ſix Ounces from a Pound. The Bole remains ſaline. I have boiled it in Water, filter'd, and inſpiſſated the Lixivium, and thereby procured a large Quantity of a yellow, ſaline, ſtyptic Salt, that was not alcaline, but appeared a new Kind of Salt. And this has generally been my Succeſs; whence I wonder *Beguinus*, and others, ſhould write, that they could convert the whole Quantity of Salt into excellent Spirit of Salt. For my own part, I never could, with the utmoſt Care and Caution, in the moſt exact manner, and with the ſtrongeſt Fire, long continued, obtain above half the Quantity, unleſs there had chanced to be any Moiſture adhering to the Salt, or the Bole. This Diſtillation of Sea-Salt requires a ſtronger Fire than that of Nitre.

REMARKS.

This Spirit ſhews that a certain Part, but not the whole of the Salt, is here converted into Acid, by means of the Fire and Bole. In this Diſtillation, towards the End, a yellowiſh Matter, inclining to white, always fixes to the upper Part of the Receiver, and has a ſweetiſh, ſtyptic, ſaline Taſte; and I have found this in great Plenty, when the Operation was performed with Brick-Duſt inſtead of Bole; it ſeems to proceed from the Salt and fat Earth mixed together. The Salt obtained from the Caput Mortuum is highly commended by *Helmont* for the Preparation of *Butler*'s Stone; and the Spirit is recommended for the ſame Purpoſes as that of the preceding Proceſs, where the Particulars relating to this are already conſidered.

GLAUBER'S SAL MIRABILE.

Take the white, ſaline, fixed Salt remaining at the Bottom of the Retort, in the Preparation of *Glauber*'s Spirit of Sea-Salt, to be got out by breaking the Glaſs; bruiſe it, melt it in a Crucible at the Fire, with Care to prevent any Coals falling in, and afterwards dilute it with common Water. Or elſe diſſolve the Salt, as it remains in the Retort, by pouring hot Water to it; ſtrain the Lixivium hot, evaporate it to a Pellicule, and ſet it in a quiet cold Place; it uſually coagulates into a Maſs like Ice, or if it remains ſomewhat fluid, it turns ſolid upon being poured into another Veſſel. If the Salt be diſſolved in ſix times its Quantity of hot Water, then thickned again, and ſet by in a large Glaſs, it ſhoots into beautiful Cryſtals, of a particular Figure, conſiderably large, that remain ſolid, and do not run in the Air.

REMARKS.

The famous Inventer of this Salt juſtly called by the Name of *Wonderful*, not only on account of its being new, but of the ſurpriſing Effects it produces. I know ſome Chymiſts who are fond of Syſtems, pretend that no more than a true *Tartarum Vitriolatum*, is here produced, which was long known before the Time of *Glauber*. But *Tartarum Vitriolatum* has not the Properties which are found in this Salt, either with reſpect to Figure, Taſte, or any Thing elſe; for if this Salt be properly prepared, reduced to Powder, and mixed with thrice its Weight of Vinegar, Beer, Wine, or Water, and ſet apart, it freezes them. When melted in a Crucible, if a fourth Part of Antimony be thrown to it, by a Piece at a Time, it wonderfully reſolves it, and has many other Effects, as to which *Glauber*, *Boyle*, *Becher* and *Stahl* deſerve to be conſulted; all of them Men of the utmoſt Penetration,

tration, in giving Light to the more abſtruſe Parts of Chymiſtry; to whom we muſt alſo add the great *Homberg*. In Surgery this Salt is of excellent Uſe againſt Putrefactions and Gangrenes; it is alſo of Uſe, when internally taken, by gently ſtimulating, reſolving, purging, and promoting of Urine.

SEA-SALT REGENERATED.

Dilute four Ounces of Oil of Tartar per Deliquium, with thrice its Weight of fair Water; put them into a tall and large Glaſs Body, with a narrow Mouth, and heat the Liquor ſtrongly: Then, by Means of a Funnel let fall into it, by a Drop at a Time, *Glauber*'s Spirit of Salt, or that prepared with Bole, a great Effervecence will be excited. When this is over, ſhake the Glaſs, and mix all well together; then drop in more Spirit, and mix as before, till the Alcali be perfectly ſaturated with the Acid. Now let the Liquor reſt, and gently pour it from the Fæces into a Filter; evaporate to a Pellicule, ſet it in a cold quiet Place, and perfect Chryſtals of Sea-Salt will be obtained. Treat the remaining Liquor in the ſame Manner, after the firſt Chryſtallization is over, and this will afford the ſame Salt, which will be fixed in the Fire, and have all the other Properties of native Sea-Salt.

REMARKS.

The vegetable Alcali, which indifferently receives any Acid, is here determined by the Acid of Sea-Salt; and being ſaturated therewith, aſſumes the Nature of that Salt.

OF THE SUBTILTY AND SPECIFIC VIRTUES OF THE SPIRIT OF SALT.

Common Salt is of the neutral Kind, and conſiſts of an Acid and Alcali as is ſufficiently evident from its artificial Compoſition, from Spirit of Salt, and Salt of Tartar mixed in a due Proportion to the Point of Saturation. But this Acid cannot be more commodiouſly diſengaged from the common Salt, than by an Addition of Oil of Vitriol, which, when mixed in equal Quantity with it, not only excites a violent Ebullition, becauſe the Acid of the Vitriol acts powerfully upon the alcaline Principle of the Salt, but alſo a thick, white, and highly penetrating Smoke aſcends, which, when concentrated, affords an highly acid fuming Spirit, which muſt be kept in Glaſſes well cloſed with Glaſs Stoppers. If this Spirit is very ſtrong, it becomes hot on the Affuſion of Water, almoſt in the ſame Manner with Oil of Vitriol.

The Diſtillation of this Spirit with Oil of Vitriol, is moſt commodiouſly made from a Glaſs Cucurbit by an Alembic; for by Reaſon of the violent Effervescence and Froth, the Diſtillation cannot be commodiouſly made from a Retort, becauſe 'tis to be apprehended that the Froth may paſs over. A proper Quantity of common Water is to be added, which aſſiſts the Ingreſs of the Acid of the Vitriol into the interior Parts of the common Salt, by which Means a larger Quantity of Spirit is obtained.

The Rectification may be made from the Retort; thus a Spirit of a yellowiſh Green, which is its genuine Colour, is yielded, and the groſſer Parts of the Acid of the Vitriol remain in the Bottom. This Spirit tinges the Skin with a Colour reſembling that of Roſes.

The highly penetrating and ſubtile Nature of this Acid is obvious from this, that in a gentle Heat, or even in *Balneo Mariæ*, it paſſes over the Helm of the Alembic, and when lodged in open Glaſſes, ſo exhales as ſoon to fill the whole Room; and that the penetrating Nature of this acid Salt ſurpaſſes that of Nitre, I am induced to believe, becauſe the acid of Salt has a freer Acceſs into the Pores of Gold than that of Nitre, which diſſolves all other Metals; for without an Addition of common Salt, the firm Compages of Gold cannot be diſſolved.

So great is the Subtilty of the Acid of common Salt, that when taken internally, it diffuſes its Operation and Efficacy to remote Parts, eſpecially thoſe of the membranous Kind. But it in a particular Manner exerts its Influence on the nervous and ſenſible Membranes of the Lungs, by ſtimulating and agitating which, it excites a gentle Cough; for which Reaſon, the Acid of common Salt ought to be very cautiouſly uſed, without loſing its Texture; it, alſo, by its powerful Stimulus, penetrates to the urinary Paſſages; for there is hardly a more efficacious Medicine for exciting a Diſcharge of Urine, than Spirit of common Salt.

Thoſe who have Fontanels in their Bodies, and frequently uſe Spirit of Salt in Broths prepared with Fleſh, perceive pungent Pains in their Fontanels. The great Subtilty alſo of this Spirit, is the Reaſon, why by acting on the nervous Coat of the Stomach, it excites the Appetite far better than all other acid and mineral Spirits.

Strongly concentrated Spirit of common Salt has this peculiar to it, that it does not, like other corroſive and highly concentrated Acids, ſuch as Oil of Vitriol, and my fuming Spirit, by the Addition of a ſufficient Quantity of highly rectified Spirit of Wine, loſe its acid Taſte, and aſſume a ſweet Taſte and Smell. The ſtrong Acid of common Salt remains entire in the Bottom of the Cucurbit; for 'tis ſufficiently known to Chymiſts, that Oil of Vitriol, after the Addition of a ſufficient Quantity of highly rectified Spirit of Wine, at different Times, may, by Diſtillation, be converted into a very penetrating Spirit, of a grateful Taſte and Smell.

Thus alſo my fuming Spirit, upon an Admixture of twelve Parts of highly rectified Spirit of Wine, becomes ſweet, and aſſumes a grateful Taſte and Smell, becauſe by the oleous and ſulphureous Parts of the Spirit of Wine, the acid Spicula are ſo corrected and ſheathed up, as to aſſume a quite different Nature, Texture and Efficacy. But this is not found to happen in the Spirit of Salt, which rejects this Union of the oleous and phlogiſtic Spirit; for it retains its Acidity entire, except that its thinner ſulphureous Part being united with the inflammable Spirit, in ſome Meaſure changes its Smell, and renders it more grateful.

'Tis alſo peculiar to Spirit of Salt above that of Vitriol and Nitre, that it does not ſo quickly diſſolve Filings of Steel, but leaves the *Lapis hæmatitis*, and the moſt ſubtile *Crocus mortis* entirely untouched; whereas common Salt, or which is ſtill better, Sal-ammoniac, acts more quickly and powerfully on chalybeate Minerals, the *Lapis hæmatites*, and Filings of Steel, and by diſſolving them, converts them into a highly aſtringent Vitriol, provided they are intimately mixed in a Crucible, and kept on the Fire for a conſiderable Time, which neither happens with Vitriol nor Nitre.

No Acid ſo ſoon extracts the Sulphur, with which Iron is richly impregnated, as the Acid of common Salt; for whether a Solution of Steel, with Spirit of Salt, is inſpiſſated, or whether Sal-ammoniac, with Filings of Steel, is treated by a cloſe Fire, a Vitriol is obtained of a yellowiſh Colour, an aſtringent Taſte, a grateful Smell, and which is not capable of Cryſtallization, but melts away in the open Air; and if duly dephlegmated Spirit of Wine is poured upon it, the ſulphureous Part of the Steel, and the thinner Portion of Salt immediately enter it, and by this Means is prepared a Tincture of Steel, which is of a yellow Colour, a fragrant Smell, a ſubaſtringent Taſte, and highly efficacious in reſtoring the Tone of the Parts; for by this Means the ſulphureous Subſtance of Steel, which is of great Uſe in Medicine, may be moſt commodiouſly ſeparated.

'Tis, alſo, to be obſerved, that highly concentrated Spirit of Salt, when mixed with Oil of Vitriol, produces a greater Effervescence, than any other acid Spirit. *Hoffman. Obſ. Phyſ. Chym. Lib.* 2. *Obſ.* 17.

OF THE SOLUTION OF SALTS.

It has hitherto been received as an inconteſtable Maxim among Chymiſts, that phlogiſtic or inflammable Spirits are the moſt commodious Menſtruums for oleous, reſinous, and ſulphureous Bodies, but not at all for Salts, whoſe Solution is obtained by aqueous Menſtruums. This Doctrine ſeems to be confirmed by Experience, which convinces us, that Spirit of Wine highly rectified, or deprived of all its Phlegm, neither diſſolves and imbibes neutral Salts, nor thoſe of the fixed alcaline Kind, when poured upon them, but leaves them untouched. We ſhall therefore ſhew, that this Maxim is not ſo univerſal as it is generally thought, but that it has many Exceptions, in which it may be demonſtrated to the Eye, that highly rectified Spirit of Wine does not reject Salts of all Kinds, but readily diſſolves them, and is incorporated with them; for as for fixed alcaline Salts, we obſerve, that in the Abſtraction of highly rectified Spirit of Wine from Salt of Tartar, eſpecially when frequently repeated, a large Quantity of this Salt is diſſolved in the Spirit, which by this very Means becomes highly acrid, alcaline, and proper for the Diſſolution of Oils; for when I took ten Ounces of the Salt of Tartar, well calcin'd, and by a gentle Heat drew off two Quarts of highly rectified Spirit of Wine from them, I obtained a Spirit richly impregnated with the Salt of Tartar. But as the Salt of Tartar always ſeparates a great deal of Humidity from the rectified Spirit of Wine, hence it aſſumes a liquid Form in the Bottom of the Cucurbit. This Humidity I abſtracted by a proper Evaporation, and afterwards calcined the Salt in a Crucible, and upon examining the Weight, found that it had loſt three Ounces, becauſe only ſeven Ounces remained. I repeated this Experiment, and poured the ſame Spirit on the Salt of Tartar, to be abſtracted by a gentle Heat, but had only half the Quantity drawn off; and in the Cucurbit there remained two Liquors, one of which floating above the Liquor of the Salt of Tartar, was of a yellow Colour,

lour, of a highly acrid Taſte, and full of an alcaline Salt. This is by Chymiſts called the Tincture of Tartar. The other, which was below it, was only a Solution of the Spirit of the Salt of Tartar, by Means of the Phlegm left. This, when dried and calcined, had its Weight conſiderably decreaſed.

From this Proceſs 'tis ſufficiently obvious, that tho' the Salt of Tartar ſuſtains the Force of the Fire and Air, ſo as to have no Part of it exhaled, yet it may, by frequent Abſtraction, by an inflammable Spirit, become not only volatile, but alſo capable of being reſolved by ſuch a Spirit.

'Tis, alſo, to be obſerved, that Salt of Tartar, however ſtrongly calcined, always ſeparates, by Digeſtion, and Abſtraction, from the higheſt rectified Spirit of Wine, a Portion of Phlegm, in which it diſſolves; a certain Proof that the phlogiſtic or vinous Spirit is nothing but the Oil of thoſe Things which have undergone a Fermentation, reſolved into Phlegm, by the inteſtine fermentative Motion. This I ſhall afterwards evince by other Experiments.

The yellow Colour of the Tincture of Tartar is owing to no other Cauſe, than that the Oil of the Spirit of Wine, intimately mixed with the Salt of Tartar, is capable of tinging it with that Colour, which may be confirmed by many Experiments, eſpecially in the Elaboration of the acrid Tincture of Antimony.

Not only fixed alcaline Salts may be rendered ſoluble, in highly rectified Spirit of Wine, but I can alſo prove, from various Experiments, that there are neutral Salts, which are more expeditiouſly diſſolved in highly rectified Spirit of Wine, than any fixed alcaline Salt; ſo that ſix Parts of the Spirit are capable of receiving and retaining in their Pores one Part of the Salt.

Theſe are two artificial Salts; the one is prepared thus: We take any given Quantity of pure and dry volatile Salt of Sal Ammoniac in a Glaſs, into which we gently drop Aqua Fortis, or Spirit of Nitre, till the Point of Saturation is found, by which Means the neutral Nature of this Salt ought to be accurately inveſtigated. This Liquor, which is of a nitrous and acrid Taſte, we evaporate in a warm Furnace, by which Means we obtain a highly white and dry Salt, of a nitrous and acrid Taſte, which, when thrown upon the Coals, flames, and leaves only very few terreſtrial Parts. The other of theſe Salts is prepared thus: We take volatile and dry Salt of Sal Ammoniac; this we ſaturate with Spirit of Salt inſtead of Aqua Fortis, by which Means there is produced a third Salt, exactly like Sal-Ammoniac, and which is quickly united with rectified Spirit of Wine.

But when this ſame volatile Salt is converted into one of a third Kind, like Sal-Ammoniac, with Spirit, or Oil of Vitriol, it is by no Means ſuſceptible of an Union with the Spirit of Wine, but flies its Embraces. For which Reaſon, if rectified Spirit of Wine is poured upon a Solution of this Salt made with common Water, the volatile Salt forthwith ſubſides, which does not at all happen, if this Spirit is poured upon the beforementioned Salts when diſſolved; for the Solutions of theſe are capable of an intimate Union with Alcohol of Wine.

The Reaſon of this Difference ſeems to be, that the Spirit of Vitriol is a highly fixed Acid, whereas the Spirit diſtilled from Nitre and common Salt is of a highly volatile and ſubtile Nature, for which Reaſon, there is a cloſe Union between theſe Spirits and this volatile Salt; but its Union is leſs with a more fixed Acid. For the ſame Reaſon, if the Salt prepared of the Oil of Vitriol and the volatile Salt of Sal-Ammoniac is by a brisk Fire urged in a Glaſs Cucurbit, the volatile Salt flies off, and the Acid of the Vitriol is left; which, however, does not happen with the two forementioned Salts, which, when treated with a brisk Fire, fly totally off in the Air, and leave no Marks of themſelves.

Theſe neutral Salts, capable of a Solution in Alcohol of Wine, are of ſingular Efficacy, both in Medicine and Chymiſtry; for Nitre thus diſſolved in my Bezoardic Spirit, my anodyne or camphorated Liquor, is an excellent Medicine for preventing and diſcuſſing internal Inflmamations, and for duly expelling exanthematous Diſorders.

'Tis alſo well known, that Nitre is excellent for diſcuſſing eryſipelaceous Inflammations of the Skin, when mixed with camphorated Spirit of Wine, which is by itſelf too hot and burning. But as common Nitre is incapable of ſuch an Union, hence the End may be moſt commodiouſly obtained by my volatile artificial Nitre.

As for the other Ammoniacal Salt diſſolved in Spirit of Wine, it may be rendered a Stomachic Medicine of ſingular Efficacy, when 'tis invigorated by the Addition of a proper Quantity of the Spirit of Salt; for twenty or thirty Drops of it thus prepared, and exhibited in a proper Vehicle, are excellent for reſtoring a languid Appetite, reſolving thoſe Crudities which are the Cauſes of various Diſorders, and may be properly uſed as a Succedaneum to the aperitive Tincture of *Mœbius*, whoſe Virtues it in ſome Meaſure ſurpaſſes; for 'tis ſufficiently known that this Phyſician got a great deal of Money Means of his aperitive Tincture, which he prepared of rectified Spirit of Salt, ſomewhat corrected by the Addition of a proper Quantity of Salt of Tartar; for which Reaſon, its Virtues are derived partly from the ſubtile Spirit of the acid Salt, and partly from the neutral Salt produced from the Spirit of Salt and the Salt of Tartar. But ſince we, inſtead of Salt of Tartar, take the volatile Salt of Sal-Ammoniac, and ſince the Virtues of this Salt are far more efficacious in correcting the Diſorders of the Stomach than thoſe of common Salt, hence it follows that the Tincture prepared from it muſt be alſo more efficacious. But *Mœbius*, in my Opinion, gave the Name of Tincture to this Liquor, becauſe he tinged it with the Flowers of Daiſies or Roſes, in order the better to conceal the Secret.

That there are in Nature Salts of very different Kinds, is ſufficiently known, ſince ſome are natural, and others artificial, ſome acid, and others alcaline, whilſt others are of the neutral Kind. 'Tis alſo known, that the Effects of theſe are very different, and that they are all capable of being diſſolved in Water, which is, as it were, their ſpecific Menſtruum; but at the ſame time, 'tis to be doubted whether many know that their Solution is very far from being equal, but widely different, ſince ſome are ſooner and more quickly diſſolved, and enter the Interſtices of Water in a much larger Quantity, whilſt others are diſſolved ſlowly and with Difficulty, and are received into Water in ſmaller Quantities. Concerning this I made the following Experiments.

One medicinal Pint of Water quickly diſſolves four Ounces and an half of common Salt, and one Pint common Meaſure diſſolves ſix Ounces of it.

A medicinal Pint of Water, by ſufficient Agitation, receives ſix Drams of Nitre, and the ſame Quantity of Vitriol is diſſolved by the like Quantity of River Water.

Only two Ounces of Alum can be diſſolved in one Medicinal Pint of Water, and, which is more ſurprizing, the ſame Quantity of the *Arcanum Duplicatum* can only be diſſolved in the like Quantity of Water.

Among the Salts which are moſt eaſily diſſolved, and with which the whole Water is, as it were, ſaturated, the moſt conſiderable is the artificial purgative *Epſom* Salt, which is quickly diſſolved by an equal Quantity of Water; ſo that one medicinal Pint of River Water commodiouſly receives twelve Ounces of this Salt.

The Salt of Tartar, which is alcaline, is alſo eaſily diſſolved, ſince one Pint of Water is capable of receiving almoſt nine Ounces of it. Tho' theſe Experiments may at firſt Sight appear trifling, yet they are of ſingular Importance in Chymiſtry, ſince from them we learn,

1*mo*, How much Water is requiſite to reſolve and depurate theſe impure Salts.

2*do*, From a Solution of common Salt, we learn, that there can be no ſaline Waters, ſixteen Ounces of which can poſſibly contain more than ſix Ounces of Salt.

3*tio*, Theſe Experiments, in a great Meaſure account for the Separation of Salts, when mixed with Waters of various Kinds. Thus, for Inſtance, if Alum is added to a Solution of Salt, by previous Boiling and Inſpiſſation, the Alum is firſt ſeparated in the Form of Cryſtals in the aqueous Menſtruum, but the common Salt is left, which by continuing the Inſpiſſation, may alſo at laſt be obtained in the Form of Cryſtals. The Reaſon of this is, becauſe the Alum requires a greater Space in order to be contained in the Water than the common Salt. Hence this Space being leſſened, it is forced to a Separation, and quits the Pores of the Water. Beſides, 'tis known that common Salt almoſt always adheres to Nitre, but this Salt ought carefully to be ſeparated from it, becauſe it not only hinders its Inflammability, but reſiſts the Separation of h laudable and good Aqua Fortis; for when a large Quantity of Salt adheres to the Nitre, an Aqua Regia is rather obtained, which diſſolves Gold and not Silver. The Method of Separation is this. The Nitre is diſſolved in a due Quantity of Water, and after gentle Boiling, the Veſſel expoſed to a moderately cold Air, by which Means the Nitre deſcends in form of pyramidal Cryſtals, whilſt none of the Salt is precipitated. Afterwards, upon Inſpiſſation and Cryſtalization, the Nitre is ſeparated, and the common Salt remains in the reſt of the Liquor. The Reaſon of this is to be deduced from the more eaſy Solution and Retention of the common Salt in the Water than of the Nitre.

'Tis ſufficiently known that the Arcanum Duplicatum is prepared of Nitre and Vitriol, if theſe two Salts are duly calcined; nor do they however at all Times ſo cloſely unite with each other, as to form the Sal Duplicatum, but the vitriolic and nitrous Parts often remain ſeparate. If therefore we would ſeparate from theſe two Salts the Arcanum Duplicatum, which is a neutral Salt, the Lixivium duly boiled, muſt be ſubjected to Cryſtallization, by which Means the Arcanum Duplicatum is precipitated, whilſt the Vitriol

Vitriol and Nitre remain in the Lixivium; for from what has already been ſaid, 'tis obvious that one medicinal Pint of Water can hardly contain an Ounce of this Salt.

4*to*, If we intend to ſeparate Salts of different Kinds from each other, this muſt be obtained by a Solution with Water: For thoſe Salts which are copiouſly conveyed into the Pores of the Water are moſt ſpeedily diſſolved, whereas thoſe which with Difficulty enter the Pores of the Water, require a longer Time for their Solution. Thus, for Inſtance, if we intend to ſeparate the Arcanum Duplicatum, from another neutral Salt, ſuch as Nitre or Vitriol; or Sal Ammoniac from common Salt or Nitre, we muſt pour common Water upon them, which imbibes the common Salt or Nitre, and leaves the Arcanum Duplicatum in the Bottom. In like manner, if we intend to ſeparate the Arcanum Duplicatum, or vitriolated Tartar, from an alcaline Salt or Pot-aſh, this End muſt be obtained by an Effuſion of Water, which quickly diſſolves the alcaline Salt, and leaves the Neutral. Thus alſo Alum is ſeparated from Vitriol; for the latter is more quickly diſſolved than the former.

5*to*, Since there is no Phenomenon in Nature without its adequate Cauſe, the Reaſon why ſome Salts are more eaſily diſſolved than others ſeems to be placed in the Water itſelf. The Salts which are moſt eaſily diſſolved, ſeem to conſiſt of highly ſubtile, much divided, and ſmall Particles, whereas thoſe which are with Difficulty diſſolved conſiſt of groſs, coarſe, firmly cohering, and conſequently fixed terreſtrial Parts; for the highly ſubtile and minute Particles are capable of entering the minute Pores and Interſtices of the Water, from which the groſſer Particles are excluded. From what has been ſaid 'tis obvious that *Epſom* Salt is of a highly ſubtile Nature, becauſe an Ounce of it is received by an Ounce of Water, which is very ſurpriſing, and ſeems hitherto to have been adverted to by none. Hence it alſo happens, that highly rectified Spirit of Wine, when poured upon a ſaturated Solution of this Kind, forthwith coagulates it into a firm and ſtable Maſs, like Ice, becauſe the rectified Spirit of Wine has an eaſy Acceſs into the Water. Hence 'tis neceſſary that the ſolid Particles of the Salt, which, when joined together, form ſuch a firm Maſs, ſhould be ſuddenly forced from the Pores of the Water. This Subtilty of *Epſom* Salt is owing to this, that there is a ſmall Quantity of fixed Earth in it; for 'tis remarkable that this Salt, when mixed with Powder of Charcoal, and expoſed to the Fire in a Crucible, is totally evaporated, and fills the Room with a ſulphureous Smoke. This Salt alſo, in conſequence of its Subtilty, is preferable to others for purging, becauſe it inſinuates itſelf more deeply into the inteſtinal Coats than any other Salt, ſuch as the *Arcanum Duplicatum*, Nitre, or common Salt. And becauſe common Salt is more ſubtile than Nitre, it is alſo more purgative. But a Solution of Alum is not to be procured without great Difficulty; for which Reaſon, on account of the large Quantity of Earth it contains, it braces up the Pores, and is of a more aſtringent Quality than Vitriol, becauſe it contains a greater Quantity of Earth, as is obvious from Calcination, in which the Alum affords a greater Quantity of *Caput mortuum* than the Vitriol. Common Salt is, beſides its Salubrity, excellently calculated for preſerving Fleſhes, and preventing Putrefaction, becauſe it enters the Pores of the Fleſh to be preſerved, and extracts its Humidity, which cannot be ſo ſpeedily done by other Salts: And on account of the Subtilty and eaſy Solution of *Epſom* Salt, I am apt to think that Bodies might be better preſerved by it than by any other Salts. *Hoffman. Obſervat. Phyſ. Chym. Lib.* 2. *Obſ.* 5. & 6.

OF THE CAUSTIC QUALITIES OF SALTS.

That the cauſtic and virulent Quality of Salts conſiſts in the great Subtilty of their Parts, may at firſt appear a Paradox, tho' the Truth of the Obſervation is ſufficiently evinced from the following Conſiderations. 'Tis an important Circumſtance, both in Natural Philoſophy and Chymiſtry, to know the various and ſurprizing Natures of the Mixtures of Bodies, ſince from theſe ariſe the various Phenomena and different Operations of theſe Bodies. Thus, for Inſtance, tho' the *Pyrmont* Mineral Waters far exceed all others, in their penetrating and ſaline Taſte, yet in twenty four Hours, if they are expoſed to the free Air in a large Veſſel, they loſe all their Taſte and Efficacy, and only reſemble common Water, ſince all the ſaline, ſpirituous, and medicinal Parts are evaporated in the Air. 'Tis alſo to be obſerved, that if *Pyrmont* Water is ſubjected to Diſtillation in a cloſe Veſſel, the Vapour and Water diſtilled retain no Taſte, nor is any Thing of a ſaline or vitriolic Nature to be found either in the *Caput Mortuum* or in the Water itſelf.

It may ſeem ſurpriſing, that ſo efficacious a Salt ſhould thus vaniſh, and be evaporated. But our Surprize will ceaſe, when we know from Chymiſtry and Natural Philoſophy, that the moſt acrid Salts, and even mild alcaline, and fixed acid Salts, when treated in the like Manner, are found to conſiſt of a ſubtile, volatile and inſipid Vapour. Thus quick Lime, by an Affuſion of Water, acquires a highly acrid Taſte, but by Boiling loſes all its acrid Taſte and Efficacy. This ſame quick Lime, with an Addition of Pot-aſh, when diſſolved and boiled in Water, and then inſpiſſated, affords a Cauſtic ſo powerful, as by ſingle Contact to corrode Leather, Paper, Cloths, and other Subſtances, and convert them into a kind of Mucilage. Notwithſtanding this, if a few Ounces of this Salt, diſſolved in Water, are boiled and, inſpiſſated, and after the Addition of freſh Water, the Boiling and Inſpiſſation frequently repeated, there at laſt remains a fourth Part of inſipid Earth. The ſame happens to all fixed alcaline Salts, and to common Salt, which, if they are diſſolved, boiled, coagulated, calcined, and afterwards diſſolved and coagulated ſeveral Times, afford nothing but an inſipid Earth.

But the Curious are not equally appriſed of another Thing, which happens with reſpect to the Boiling of Salts, which is, if the Water, which is a Vehicle for the Elements and Seeds of the Salt, is not boiled by a gentle and gradually decreaſing, but by a violent Fire, a fourth Part of the Salt is loſt, and a great Part of it diſſipated in the Air. Nor is it to be doubted but the like happens to vitriolated Tartar, and the *Arcanum Duplicatum*, if they are boiled by too ſtrong a Fire.

'Tis alſo obſervable, that an acid Corroſive, if duly managed, degenerates into a ſimilar inſipid Matter. Thus Oil of Vitriol, which is a highly fixed and powerful Cauſtic, degenerates into a black and inſipid Earth, and a ſomewhat acid Phlegm, of a ſulphureous Smell. Now that the Oil of Vitriol is a highly concentrated and fixed Acid, is a Thing too well known to ſtand in need of a Demonſtration; yet if this Oil is drawn from ſulphureous Subſtances, whether of the vegetable or animal Kind, ſuch as Opium, Orpiment and Antimony, this highly fixed and ſtrong Acid is converted into an evaporable Smoke, of a highly volatile Nature, almoſt without any Degree of Acidity, and only leaves an inconſiderable Remainder of Acid in the *Caput Mortuum*. From theſe Experiments 'tis obvious, that this fixed Acid is compounded of very active and ſubtile Parts, which active and ſubtile Nature they immediately aſſume upon the Admixture of a ſmall Quantity of any pinguious and ſulphureous Body.

My Spirit, which, when poured into diſtilled Oils, produces a Flame, is ſo highly corroſive, as in a ſhort Time to attack, corrode, and diſſolve the moſt ſolid Metals, yet it is totally evaporated in the Air, and reſolved into Smoke, which can hardly be contained in the cloſeſt Veſſels; a ſure Proof that it conſiſts of highly ſubtile Parts.

Hence we can eaſily account for Glauber's Experiment, which is, that common Salt, by an Admixture of a due Quantity of Oil of Vitriol, is diſſolved into a highly ſubtile Vapour, which fills the whole Room. But if this Smoke is concentrated and collected, it is an highly acid and corroſive Spirit.

If we conſider Vegetables, we find large Numbers of them compoſed of highly ſubtile Parts, cloſely cohering with each other, whilſt at the ſame Time they are poſſeſſed of ſingular Efficacy. This is ſufficiently obvious from draſtic Purgatives and Emetics, which exert their Efficacy by a highly ſubtile, acrid, and cauſtic Salt, ſuch as White Hellebore and Aſarabacca, which are poſſeſſed of a very draſtic, purgative and emetic Quality, yet theſe, when infuſed in Water, and boiled for a conſiderable Time, loſe all their draſtic Quality. Tobacco is alſo a draſtic Purgative and Emetic, and works in a very virulent Manner on the human Body; yet if it is boiled in a ſufficient Quantity of Water, its draſtic Quality is loſt, and an Extract obtained from it, highly extol'd by ſome Phyſicians for its Efficacy in reſolving viſcid Humours, which ſo far injure Expectoration, as to threaten a Suffocation. Aloes, tho' not ranked among the Claſs of draſtic Purgatives, yet purges ſo ſtrong, and throws the Maſs of Blood into ſo violent Commotions, that a few Grains of it are ſufficient for a Doſe; but if it is diſſolved in River Water, and boil'd for a conſiderable Time, its cathartic Quality is ſo much impaired, that it is not in the leaſt purgative, unleſs exhibited in a very large Doſe. Scammony and Coloquintida may in like Manner be deprived of their purgative Quality by Boiling.

It may ſeem ſomewhat more difficult to deprive mineral Subſtances of their draſtic, emetic and purgative Quality by Boiling. But the Truth of this is confirmed by the following Experiment. When in preparing emetic Tartar from *Crocus Metallorum* and Cream of Tartar, the Infuſion is boiled long, we obſerve, that by this Means the Efficacy of the Medicine is greatly impaired, ſo that ten Grains of it muſt be exhibited for a Doſe, whereas otherwiſe two or three are ſufficient.

All theſe Experiments ſufficiently evince, that not only the Acrimony of Salts, but alſo the virulent and draſtic Qualities of other Bodies, are to be aſcribed to their highly ſubtile and moveable

moveable Parts, which, when closely joined, exert a corrosive and acrid Virtue, which the Air, Water, and Heat destroy, by disjoining them; nor is it surprising that Salts consist of highly subtile Parts, because the more subtile any Body is, the quicker Motion it receives and propagates, as is observable in the Æther, the Air and Water.

But the Corrosion and Dissolution of Bodies by Salts are produced by the intense Motion of their Parts, as is obvious from their Effects. The more concentrated therefore the moving Force is, the more conspicuous and noble is the Effect. Thus the fuming concentrated Spirit corrodes more powerfully than the Spirit of Salt, which again is more corrosive than Oil of Vitriol, because the Spirit of Nitre consists of more subtile Parts than the Spirit of Salt, and the Spirit of Salt of more subtile Parts than Oil of Vitriol.

From all these Considerations, we may conclude, that all Salts are made up of a subtile, penetrating, and, as it were, ætherial Matter, and that their Parts, when joined with the Earth, as a Kind of Cement, are of a highly acrid and corrosive Quality, but when disjoined and separated, totally destitute of Virtue and Efficacy. This may be excellently illustrated by a Burning-glass; for, as by its Means the Rays of Light, when much concentrated, produce an intense Heat, so when they are more diffused, they operate in a proportionably more languid and faint Manner. *Hoffman. Obs. Phys. Chym. Lib.* 2. *Obs.* 15.

SAL ACIDUM. An acid Salt. See ACIDA.

SAL ALEMBROT. See ALEMBROT. *Schroder* describes the Preparation of a *Sal Alembrot*, thus:

> Take of common Salt, Sal Gem, and alcaline Salt, each an Ounce; make a Lixivium with the Juices of Mint, and Clove-Gilly-Flowers each two Ounces, and two Pints of Fountain Water; filter and coagulate.

SAL ALCALI, or ALKALI. See ALCALI.

SAL AMMONIACUM. See AMMONIACUM.

SAL ANATRON. See NITRUM.

SAL ANIMALIUM. Animal Salt. See ALCALI.

SAL CATHARTICUM AMARUM. The bitter purging Salt, commonly called *Epsom Sal.* This was first made by Dr. *Grew*, by evaporating the *Epsom* Waters. Some Years after, several other bitter purging Springs were found in different Counties, and Salts in small Quantities were boiled up from them, but from no Place, nor all the Places put together, in such large Quantities, as from the Springs on one Side of *Shooter's Hill* in *Kent*, about the Year 1700, which were then in the Possession of those two ingenious Chymists, Mr. *George* and Mr. *Francis Moult*, and where they made such large *Apparatus* for evaporating the Water, that they have sometimes boiled down 200 Barrels in a Week, from which, in a dry Season, and when the Land Waters did not get into their Drains, they have obtained 224 Pounds of Salt. After these Works had gone on some time, Dr. *Hoy* found out a more expeditious Way of making a purging Salt, so nearly resembling that from the purging Springs, in all its Properties, that it soon passed on the World for the other, and continued so to do. The great Consumption of these Salts (which then went only by the Name of *Epsom Salts*) as well at home as abroad, engaged some of our Physicians (many Years before *M. Bolduc* took Notice of it) to suspect, that even what was made at *Shooter's Hill* was spurious, and received an Addition of something to increase the Quantity. But these Suspicions, I dare positively affirm, were entirely groundless, as to the Salts made there, and readily believe the same of any other Place, where the Spring Waters were boiled down for Salt. But upon a Consideration, that there were greater Quantities of this Salt consumed than all the Places where the Waters were boiled could produce, which was the real Fact at that Time of Day, there was sufficient Room to suspect that some of them were not genuine, as appeared to be true some time after. For the Secret, which was then in a few Hands, of making these Salts cheap, gave those who had it an Opportunity of underselling those who made it from the Waters, and, in a Year or two, rendered them incapable of making it to any Advantage: So that the Work on *Shooter's Hill* was thrown up; and I believe there has not been 100 Pound of Salt made from the Waters since that Time in any Part of the Kingdom.

Some Time before this Work at *Shooter's Hill* was broke up, some Pains were taken to discover the Secret those had, who sold the Salt so cheap; and upon examining the several Salts, that were sold about Town, those disposed of by Mr. *G.* and *F. Moult*, were certainly genuine, and were therefore a proper Standard to judge of the rest by. But from all the Experiments then made, there could no material Difference be found between the Salt made from the Waters, and that made by them who were in the Secret. There was indeed a Salt sold by some, which, in the Course of those Trials, was found to be a *Sal mirabile*, made from the *Oleum Vitrioli* and common Salt, but shot into such small Crystals, as not at first Sight to be distinguished from the other. Necessity being Mother of Invention, it was not long before it was discovered, and the Experiment was tried at the Lady *Carrington*'s Salt-Works near *Portsmouth*; where it was found the same Thing could be done, as at another Work not far from it, and in which Dr. *Hoy* had been concerned. It was some Years after this Salt had been made at *Portsmouth*, before the Salt-Makers at *Lemington* attempted, or indeed knew the Method of making it, who are now the greatest Traders in it, and have sent several Ton in a Year to *London*, besides what has been directly exported from thence.

I remember it to have been the Opinion of the Proprietors of the Salterns near *Portsmouth*, that this purging Salt could not be made at any other Salt-Works except theirs, and that the bitter Taste in the Salt was communicated from the Earth to the Sea-Water, whilst it stood exposed in their Sun-Pans. But Time has proved this Opinion false; for besides what has been said of its being made at *Lemington*, it was about four or five Years ago begun to be made near *Newcastle*, where it is still continued to be made, and doubtless may be made at any Salt-Works, where the common Salt is made from Sea-Water by Evaporation. Whether any Thing of this Kind has been attempted at any of our Inland Salt-Springs, either in *Cheshire* or *Worcestershire*, I am not yet satisfied. There is some Difference in the making the common Salt in *Hampshire*, from that about *Newcastle*: At the first of these Places, in the Beginning of the Summer, at Spring Tides, or at New and Full Moon, the Sea-Water is let into their feeding Ponds, which are their Reservoirs for their Summer's Working, and from hence is conveyed into small square Pans, and again, after some time, from these it is conveyed into larger Pans, or Beds, which they call Brine or Sun Pans, all which are made of Sea-mud and Earth. In these last Pans, or Beds, it lies exposed to the Sun and Wind, in order to exhale the weakest Waters; and it is in these Beds, if the Weather prove very favourable, that they can make as good Bay Salt as any we have from *France*; and at such a Time they never bring their Brine to the Boilers. But if the Weather is not hot enough for that Purpose, their Brine is exposed so long in these Pans, till it becomes of such a Strength as to support their Eggs made of Glass or Wax, to a certain Height above the Surface of the Brine, which from thence is conveyed into large Stone Cisterns, and then into Boiling Pans made of Iron, where it is boiled down (after having been frequently scummed) to a Sea-Salt. 'Tis observable, that whilst the Brine is boiling, there precipitates a hard crusty Matter, which is partly taken out by Vessels placed in proper Parts of the Pan for that Purpose, and Part of it fixed on the Bottom of the Pan so hard, as to be afterwards dug off, and this the Workmen call *Scratch*, and is what Dr. *Collins*, concerning the Sea-Water boiled at *Shields*, calls a Stone Powder. When the Operation for the Sea-Salt is finished, it is taken out hot, and put into wooden Troughs, with Holes at the Bottom, through which runs the superfluous Liquor: Under these Troughs are set other Vessels (with Sticks fixed in them in a perpendicular Posture) to receive what runs through. In these Vessels the Liquor is suffered to continue some time, and according to the Quantity of Sea-Salt still left in it, will crystallize to the Sticks, something like Sugar-candy, but in much larger Shoots; and this they call Cat-Salt, or Salt-Cats, and it holds some Share of the bitter Salt. When this Salt is broken small, or rather powdered, it is so white, that some Gentlemen choose it for their Tables; but the greatest Consumption of it is among the Cake Soap-boilers. The Liquor that will not shoot to these Sticks, is what, at these Works, they call the *Bittern*, fit for making the *Sal Cathartic*um.

Near *Newcastle*, their Method is to receive the Sea-Water into their Reservoirs at High Water, at any Time of the Moon, if there be no Fresh in the River, occasioned by Rain in the higher Country; and from these Reservoirs, without exposing of it in Beds, as at *Lemington*, they pump it into their Boiling-Pans, where evaporating it almost to a Pellicle, they fill it up again eight or nine Times, and then waste it with a gentle Heat for the common or Sea-Salt. The Liquor that runs from this Salt, when taken out, and put into proper Vessels, is what they call the *Bittern*, which, if it stands some Time in those Vessels, a Salt will shoot and crystallize to the Sides, in Taste pretty much like Sea-Salt, but with a Share of Bitterness, and seems to answer to the Cat-Salt of the *Lemington* Works, and very probably would shoot after the same Manner, if they made Use of the same Apparatus.

I could not but mention this general and loose Account of making the common Salt, as necessary to introduce the Liquor called *Bittern*, which, before Dr. *Hoy* found out an Use for it, was always flung away; being so different in its Properties from

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from the Brine made uſe of to produce the Sea-Salt, that it would not boil up into the Operator, to determine the Time when to take out the Sea-Salt from the Pans, before the Bittern incorporated with it, which would otherwiſe ſpoil the whole Making.

The *Bittern* at *Lemington* (as obſerved before) not ſhooting to the Sticks, is carried by Channels into Pits made tight with Clay, where it ſtands for ſome Months, and there will ſhoot again. What Liquor remains is boiled down, till it is obſerved to be in a Diſpoſition to cryſtallize, and then is conveyed into wooden Coolers lined with Lead. The Liquor, which will not ſhoot there, is boiled down after the ſame Manner, in order for another Cryſtallization. By this Time the Liquor ſeems to have altered its Property, and becomes of a very pungent biting Taſte, and, if boiled down, will not longer ſhoot into Cryſtals, as before, but precipitates, during the Boiling, a ſmall grained Salt; and if you ſhould continue to boil down the Liquor, ſeparated from this Salt, each Quantity of Salt thus produced will be ſtill more pungent than the other. If you boil down the whole Quantity of this Liquor, it will produce a Salt, which, if expoſed to the Air, will run *per Deliquium*. The Liquor that produces this Salt is always flung away wherever the *Sal Catharticum* is made.

This is what at preſent I can give no other Name to, than a third Salt produced from the Sea-Water, differing, in ſome Reſpects, as much from the other two, as they differ from one another.

To return to the ſeveral Cryſtallizations, ſuch as mentioned to be ſhot from the Bittern, theſe will be of different Sizes, as to their Figures, and hold ſome Share of the third Salt, but now taken Notice of, which makes them ſubject to give and diſſolve; nor is their Taſte come yet to that ſimple Bitter of the pure Salt. Theſe therefore are either ſeparately, or altogether, to be flung into a Copper, with as much common Water as is ſufficient to diſſolve them, and allow of a gentle Evaporation, till they are again ready to be poured into the Coolers, in order for Cryſtallization. This generally proves to be the pure *Sal Catharticum*, throughly freed (as far as the Experiment I have tried can be convincive) from either a Sea-Salt, or the third Salt. The Liquor decanted from this Shooting may be boiled down again, in order for a ſecond Shooting, and after that a third; but as the Liquors from theſe Shootings are boiled away more or leſs, ſo you will ſooner or later meet with the pungent Liquor, which contains the third Salt, as you did in the former Shootings from the *Bittern*, from which the pure *Sal Catharticum* is as neceſſarily required to be freed as from the common Salt; a Proof of which cannot be better determined than by one of the Experiments to be taken Notice of hereafter, *viz.* that with the *Oleum Vitrioli*, which will certainly ferment with this Salt, if the Sea-Salt has not been well ſeparated from it, or if it ſtill holds ſome of the third Salt. And when any of the Cryſtallizations will not ſtand the Teſt of this Experiment, they ought to be diſſolved and ſhot again, as before, by which Means the pure Salt is to be obtained. I do not mention this as a Trial made Uſe of at the Salt-Works, but what I have by Experience found to be true. And the ſame Experiment will ſerve to diſtinguiſh a *Sal mirabile* made at theſe Works, from that made with Oil of Vitriol and common Salt. The Account they give of it is this: They take any Quantity of coarſer grained Cryſtals boiled from the Bittern, which, when diſſolved and evaporated, more than they would otherwiſe do for making the *Sal Catharticum*, they throw into a Wooden Bowl, with ſome Oil of Vitriol, where it ſtands for ten Days, and ſhoots into large Cryſtals, tranſparent, and like the *Sal mirabile*. But as this Salt, by this Method, is not ſufficiently ſatiated with the Oil of Vitriol, (if they uſe any) ſo it is eaſily diſcovered by the Oil of Vitriol, which will readily ferment with it; whereas it has no Effect on the other *Sal mirabile* made as above.

By the Aſſiſtance of *Robert Cay*, Eſquire, at *Newcaſtle*, I have received the ſeveral Shootings of Salts from their Bittern, as alſo ſome of the Bittern itſelf; from which I have obtained a pure *Sal Catharticum*, as alſo the like Kind of third Salt, as mentioned from the *Lemington* Bittern. The Method I took for doing it is agreeable to that I have already mentioned, and many Years ago tried at the Salt-Works near *Portſmouth*. It is by Mr. *Cay* that I am informed they ſometimes boil their Bittern, without letting it ſtand any Time to ſhoot of itſelf. The Difference is not very material.

If this Account be intelligible, what the *Sal Catharticum* is, will no longer be a Myſtery, and the next Thing worth the enquiring into will be, whether this Salt deſerves the Reflections that have diſcouraged the Preſcription of it? And why it may not paſs for a Salt as excellent in its Kind, and be of the ſame Nature, and have the ſame Properties, as that produced from the *Epſom*, or any other bitter purging Springs? Dr. *Grew*, in his Treatiſe, *de Natura Salis Cathart. Amari*, *Cap.* 2. ſays, that in the Evaporation of any of the bitter purging Waters, they yield a Cream at Top, as alſo a Sediment, both together weighing ſix, eight or ten Drams, from a Gallon of Water; and that the leſſer Part of this Sediment is, in Subſtance, the ſame with the Cremor; the reſt is all Salt, but conſiſts of two Sorts, one a muriatic Salt, the which is proper or peculiar to theſe Waters. In the *Epſom* Water, the muriatic Salt is about a twentieth Part of the ſaline Mixture; in the *Dulwich* it is in greater Proportion, and the ſame in ſeveral others; it is both in its acrimonious Taſte, and Figure of its Cryſtals, not unlike to common Salt. The other Salt is that which he ſays is particular or proper to the purging Waters, and is made by Evaporation and Cryſtallization. In this Preparation, firſt the earthy or plaiſtery Part is to be ſeparated, next the muriatic Salt, and laſtly a brown and dark Liquor from the proper Salt of the Waters. And in the fourth Chapter of the ſame Part, having ſhewn the Difference of the Figure betwixt the Cryſtals of this Salt and thoſe of Alum, he goes on, Neither is there any better Ground to account the purging Salt a Species of common Salt, from which being perfectly freed, it differs as much in Taſte as from Alum. And in the ſame Chapter, he ſays it will appear, the bitter purging Salt, altho' it hath ſome Qualities in common with other Salts, yet is truly, or ſpecifically different from them all. Thus far Dr. *Grew*.

Now I cannot ſee any thing in this Account, but what will, conſidering all things, very well agree with the Purging Salt from the Sea-Water: For, firſt, there is an earthy or plaiſtery Part contained in theſe Waters, and this muſt be ſeparated. The very ſame is in the Sea-Water, and is precipitated in the boiling them down, as has been obſerved, and by the Operators is called *Scratch*. Next there is a muriatic Salt allowed to be in theſe Waters; in ſome more, in ſome leſs; and this is alſo to be ſeparated. The very ſame is done from the Sea-Water, tho' in a vaſtly larger Proportion. And laſtly, there is a black and dark Liquor to be ſeparated. Tho' this is but an obſcure Way which the Doctor makes uſe of to expreſs himſelf, it cannot be better explained than by what has been found to be fact in boiling down the Waters at *Shooter's Hill*: That after ſeveral Shootings of Salts, by repeating the Boilings of the Waters, there would at laſt remain a Liquor of a deep brown Colour, which would no longer yield a cryſtallized Salt; but if boiled up dry, would afford a Salt of the ſame kind with the third Salt already mentioned. And this explaining Dr. *Grew*'s black and dark Liquor, helps at the ſame time to prove, in this Article too, that the Sea-Water affords the ſame kind of third Salt. I have tried ſeveral of the Experiments mentioned by the Doctor, by which he diſtinguiſhes his Salt from other Salts. Such as not affecting the Colour of Syrup of Violets; Curdling of Milk when boiled; in the Figure of its Cryſtals; in its eaſy Diſſolution in the ſame Quantity of Water; in its coagulating with the Oil of Tartar per Deliquium, in its Calcination; and in the Bitterneſs of its Taſte, as well before as after Calcination, *&c.* and find this Salt thus ſeparated from the Sea-Water anſwer to all the Trials. Some few Experiments, that the Doctor has not taken notice of, I ſhall here ſubjoin, and then leave the whole to the Opinion of better Judges, whether there is any ſpecifical Difference between thoſe two Salts.

In order to have a Standard for theſe Experiments, I purpoſely got Mr. *Hyet*, Apothecary at *Epſom*, (whoſe Fidelity I could depend on) to boil me down ſome of their Waters; which he did from the Well in the Town, and ſent me a ſufficient Quantity of the Salts, to anſwer the Purpoſe I wanted them for. I procured, alſo, ſome of the firſt Salts from the *Lemington* Bittern: Theſe do not hold ſo much of what I have already diſtinguiſhed by the Name of the third Salt, as I find the *Newcaſtle* Salts do. This *Lemington* Salt, I (for Diſtinction-ſake) call the firſt *Lemington* Salt. Part of this I diſſolved, and ſhot into pure *Sal Catharticum*, being freed as well from the Sea-Salt, as the third Salt; and this I call the ſecond *Lemington* Salt. I procured, alſo, from *Newcaſtle* the firſt Salt ſhot from their Bittern, which I call the firſt *Newcaſtle* Salt. Part of theſe I diſſolved and ſhot, and obtained a pure *Sal Catharticum*; and this is what I call the ſecond *Newcaſtle* Salt. I am obliged to make uſe of the *Sal Mirabile*, made from Oil of Vitriol, and common Salt, that having been taken for the *Sal Catharticum*, as alſo common Salt, that having been repreſented as the principal Subſtance of the *Sal Catharticum*.

I took half an Ounce of each of theſe Salts, and diſſolved them in about two Ounces of Water to each half Ounce of Salt. A ſmall Quantity of each Diſſolution I poured into as many Glaſſes, and dropped into them all ſome Butter of Antimony. The Precipitation that followed, ſeemed to be alike in them all; and upon dropping a little Oil of Vitriol into each, what was precipitated being more powerfully attracted by the Oil, the ſeveral Liquors became clear. Theſe are the

two only Experiments in which I found the Conſequences ſo much alike in them all.

In the following Experiments, the *Sal Mirabile* is ſufficiently diſtinguiſhed from all the reſt. Slices of Gall cut into theſe ſeveral Solutions have no manner of Effect upon any, except that of the *Sal Mirabile*, which is ſoon tinged of the Colour of Sack, or rather deeper. Spirit of Sal Ammoniac, with Tartar dropped into the ſeveral Solutions, turns them all milky, except that of the *Sal Mirabile*, which keeps its Tranſparency. The Spirit of Sal Ammoniac with Lime, the Oil of Tartar per Deliquium, the Tincture of Cochineal prepared with Spirits of Wine do every one, uſed after the ſame manner, ſufficiently diſtinguiſh the *Sal Mirabile* from all the reſt.

In the following Experiments, the *Epſom* Salt, the ſecond *Lemington* Salt, and ſecond *Newcaſtle* Salt, agree together, and differ from the common Salt, the firſt *Lemington* Salt, and the firſt *Newcaſtle* Salt. In the ſeveral Solutions I dropped a Solution of Silver in Aqua Fortis, from which followed theſe Conſequences. The Solutions of the *Epſom* Salt, ſecond *Lemington* Salt, and ſecond *Newcaſtle* Salt, became equally milky, before the Precipitation. The Solution of the Sea-Salt, and firſt *Newcaſtle* Salt, let the Precipitation paſs without receiving any milky Tinge. The firſt *Lemington* Salt, as holding leſs of the third Salt than the firſt *Newcaſtle* did, took a little milky Tinge. The Precipitation fell nimbly through the Solution of the *Sal Mirabile*, leaving it milky.

In the Condition theſe were in, I poured ſome Oil of Tartar per Deliquium to each of them; on which, after ſome time, a blueiſh Scum aroſe on the Surfaces of the *Epſom* Salt, ſecond *Lemington* Salt, and ſecond *Newcaſtle* Salt. There alſo appeared a little on the firſt *Lemington* Salt, but not on the reſt.

A Solution of corroſive Sublimate was made in Water, ten Drops of which, mixed with the ſeveral Solutions, produced little or no Alteration; but upon dropping in the Oil of Tartar per Deliquium the following Appearances were produced: In the Solution of the *Epſom* Salt, ſecond *Lemington* Salt, and ſecond *Newcaſtle* Salt, the Precipitations were red; in the Solution of the common Salt, and firſt *Newcaſtle* Salt, the Precipitations were white; in the Solutions of the firſt *Lemington* Salt, the Particles precipitated approached pretty near the Colour of the three firſt.

I took ſome of theſe ſeveral Salts in Subſtance, and to each of them poured a little Oil of Vitriol, which is one of the Experiments Dr. *Grew* tried upon his Salt, and which he ſays cauſes a moderate Ebullition, whereby it appears to partake of an alcaline Principle: But without looking for this alcaline principle from its fermenting with an Acid, (Terms juſtly exploded by the learned Dr. *Freind* in his *Prælectiones Chymicæ*) I am inclined to believe, that the Salt in which he tried the Experiment had not, according to his own Directions, been thoroughly ſeparated from his muriatic Salt. For this Oil poured on the *Epſom* Salt, ſecond *Lemington* Salt, and ſecond *Newcaſtle* Salt, produced no ſenſible Fermentation. On the Sea ſalt it acts with Violence, forcing off its acid Spirit with an inſufferable Gas. The ſame Effect in Proportion it had on the firſt *Lemington* Salt; none at all on the *Sal Mirabile*, as being a Sea-ſalt already ſatiated with the Oil.

What I have all along called the third Salt, anſwers in moſt of theſe Experiments to the Sea-ſalt, and yet has ſome Properties exceedingly different from it; to thoſe I have mentioned, theſe may be added; it will decrepitate like Sea-ſalt; it readily melts, when put in a Crucible in the Fire; and when calcined till red hot, affords a Calx equal to, if not ſtronger than, a Lime-ſtone, and ferments violently, as well with Water as with Oil of Vitriol. This Calx, when expoſed to a moiſt Air, will Part of it run per Deliquium; but not ſo ſoon as before Calcination. All theſe Properties differ in every reſpect from the common Salt, and leave me ſtill in doubt what to call it, as alſo how far Experiments of this kind may be deemed concluſive. By Mr. *John Brown* Chymiſt, in the *Philoſophical Tranſactions abridg'd*, Vol. VIII. P. 730.

THE METHOD OF PRESCRIBING THE BITTER PURGING SALT.

It may be taken in any Liquor agreeable to the Patient's Conſtitution or Palate. I often uſe the following Method:

Take of Spring-Water, two Quarts; Mace, a Dram; boil them a little, and in the Liquor diſſolve ſuch a Quantity of the bitter Purging Salt, as may be agreeable to the Conſtitution and Diſeaſe of the Patient; for an Apozem, to be drank hot, warm, or ſometimes cold, in the Morning faſting, in the Space of two Hours, with a little Exerciſe. This Apozem may be either taken by itſelf, or in the Working of other Phyſic.

The Operation of the Salt may be quickened by the Addition of Sena and Manna in the following Manner:

Take two Quarts of Spring-Water; Mace, a Dram, *Alexandrian* Sena, two Drams or three; boil them a little; and then add an Ounce of the Salt; an Ounce and half or two Ounces of the beſt *Calabrian* Manna; and run the Liquor through a Sieve.

The Salt may alſo be ſafely taken thus:

Take three Pints and a half of Spring-Water; of the bitter purging Salt an Ounce, or ten Drams. Mix them, and when the Water boils, pour upon it half a Pint of new Milk, and ſtrain the Liquor from the Curd.

The moſt proper Vehicle for this Salt in Summer is the *Tunbridge*, or any other chalybeate Water. For inſtance a Dram or a Dram and half of this Salt, taken in the firſt three or four Draughts of *Tunbridge* Water, and repeated for ſome Mornings, prepares the Humours, and clears the Way for the intended Courſe. The chalybeate Waters do ſometimes bind; which Inconvenience is remedied, by putting a little of this Salt into the firſt or laſt Glaſs.

Every Draught of the Purging Waters themſelves may be, alſo, uſefully impregnated with a Dram of the Purging Salt; three Drams or half an Ounce of which is alſo extremely proper for ſharpening Clyſters.

TO QUICKEN A DECAYED APPETITE.

Take a Flaſk of Spaw-Water, or a Quart or three Pints of any other chalybeate Water; or if not to be had, of maced Water; of the bitter Purging Salt, half an Ounce, ſix Drams, or an Ounce; mix and drink them faſting.

TO STAY VOMITINGS.

Take of any chalybeate Water, three Pints or two Quarts; or inſtead thereof maced Water; of the bitter Purging Salt, ſix Drams, an Ounce, or ten Drams; mix them, and drink them faſting warm or cold. Repeat them thrice either every Day or every other Day.

IN THE PAIN OF THE STOMACH.

Take of the beſt Sena, two Drams; Mace, a Dram; boil them in a ſufficient Quantity of Spring-Water, to three Pints or two Quarts; and to the ſtrained Liquor, add ſix Drams, an Ounce, or ten Drams of the bitter purging Salt; of the Syrup of Steel, an Ounce and half; for a purging Apozem to be drank in the Morning after the uſual Manner. Or it may be made without Sena.

IN THE HYPOCHONDRIACAL AFFECTION WITH HEAT.

Take of any chalybeate Water a Quart, three Pints, or two Quarts; diſſolve in each Draught half a Dram, or a Dram of the bitter Purging Salt; drink it at ſeven or eight Draughts cold. Or inſtead of Chalybeate Waters, it may be taken in ſimple Milk-Water, or diſtilled from the Leaves of Borage and Burnet. The Salt may be, alſo, ſucceſſively taken in this Manner for the Heart-burn.

IN THE COLIC.

Take of Spring or River Water ſeaſoned with Mace, three Pints and a half; Chamomile Flower Water, or Mint Water, ſix Ounces; the bitter Purging Salt, an Ounce or ten Drams; Manna, an Ounce and half or two Ounces. Mix them for an Apozem. Let the Patient take about half a Wine Pint at a Draught hot, and all of it in an Hour, or an Hour and half, altho' he ſhould vomit ſome Part of it. A Spoonful or two of the Tinctura Sacra may be taken before every Draught of the Apozem.

IN THE WORMS.

Mix a Dram or a Dram and half of the Salt with any Food commonly made for Children, without Milk.

IN

IN NEPHRITIC PAINS.

Take of Chamomile Flowers, a Handful; Cumine Seeds, ſweet Fenil Seeds, and Parſley Seeds, all bruiſed, of each an Ounce; Marſh-mallow Root ſliced and bruiſed, two Ounces: Boil them in a ſufficient Quantity of fair Water. To the ſtrained Liquor add half an Ounce of Turpentine, diſſolved in the Yolk of an Egg; of the bitter Purging Salt, half an Ounce; and Syrup of Marſh-mallows, three Ounces; mix them for a Clyſter. If the Pains are very great, add to the Clyſter forty or fifty Drops of cydoniated Liquid Laudanum.

If the Pains ſtill continue, Recourſe muſt be had to the following Apozem:

Take of the Decoction of Pearl Barley, ſeaſoned with Mace, three Pints, or two Quarts; ſix Drams, or an Ounce, of the bitter Purging Salt; Syrup of Marſh-Mallows, three or four Ounces: Mix them for an Apozem, to be taken hot, in an Hour, an Hour and half, or two Hours, although the Patient ſhould vomit Part of it.

This Apozem may alſo be uſed ſucceſsfully in an ISCHURY or HEAT OF URINE.

IN A DIABETES.

By this Salt, or the Waters, in conjunction with the conſtant Uſe of Chalybeate Waters, and Hypnotics, I have reſtored ſome, but indeed young Patients to perfect Health.

IN THE JAUNDICE.

In any Sort of Jaundice, with or without Stones in the Gall, the Purging Water or its Salt is very properly given in the following or other like manner:

Take of Pilula Ruffi, half a Dram; Rhubarb, and volatile Salt of Urine, each half a Scruple; Syrup of Wormword enough to make them into ſix Pills to be taken going to Bed. In the Morning following let the Patient drink this Apozem.

Take two Ounces of the Shavings of Harts-Horn; boil them in three Quarts of Spring-Water, to two: Then add Mace and Turmeric, each a Dram; and having boiled them a little, diſſolve in the ſtrained Liquor the bitter Purging Salt, and Syrup of Steel, of each an Ounce; for an Apozem to be drank as uſually.

IN MADNESS.

To quicken the Operation of purging Medicines, uſe the following Apozem:

Take of the Leaves of Baum and Borage, each a Handful; infuſe them in two Quarts or five Pints of boiled Spring-Water while it is hot, and let them ſtand in a Veſſel well covered for half an Hour. Add to the ſtrained Infuſion an Ounce or ten Drams of the bitter Purging Salt; of the Syrup of Violets, three Ounces. Mix them for an Apozem to be drank by itſelf, or with any convenient Purge inſtead of Poſſet-Drink. Or,

Take an Ounce of the bitter Purging Salt; diſſolve a Dram in a Draught of any chalybeate Water, and let the Patient drink eight ſuch Draughts.

The ſame Water or Salt may alſo be taken uſefully in the Intervals of other Purgations.

IN THE HEAD-ACH.

After Bleeding, and (if neceſſary) Vomiting, exhibit the following Medicines:

Take prepared Scammony, powdered Rhubarb, and Mercurious Dulcis, of each ten, twelve, or fourteen Grains; Syrup of Buck-Thorn, enough to make them into five Pills, to be taken at four or five o'Clock in the Morning, and let the Patient ſleep upon it. After three Hours let him drink this Apozem.

Take of Spring-Water ſeaſoned with Mace, three Pints or two Quarts; of the bitter Purging Salts, ſix Drams or an Ounce; Syrup of Violets, two Ounces. Mix and let the Patient take them by convenient Draughts, being kept warm in the Working.

Let the Pills and Apozem be repeated every third and fourth Day, and the Apozem by itſelf on the intervening Days, continuing this Courſe, if neceſſary, for a Fortnight or three Weeks.

IN THE MEGRIM.

With other proper Remedies, uſe the following:

Take of Pilula Maſtichina, two Scruples; Chymical Oil of Marjoram five Drops: Mix and take them going to Bed. Next Morning drink this Apozem.

Take of Spring-Water ſeaſoned with Mace, a Quart, or three Pints; the Water of Sage of Virtue, four Ounces; ſweet Marjoram Water, two Ounces; the bitter Purging Salt, ſix Drams; mix and take them in the uſual manner.

IN FITS OF THE MOTHER.

If a temperate Purge be neceſſary, uſe the Purging Salt diſſolved in Spaw-Water, or that of Baum.

IN THE WANDERING GOUT.

The Purging Waters or their Salt may be taken, with other proper Remedies, in the following manner.

Take of the Powder of reſinous Jalap, half a Dram; of prepared Scammony, ſix Grains; Calomel, half a Scruple; Syrup of Buck-Thorn, enough to make a Bolus, to be taken at five in the Morning, the Patient ſleeping upon it. After three Hours let him drink this Apozem.

Take of Pearl-Barley, an Ounce and half; Currants, three Ounces; boil them in Spring-Water, to two Pints and a half; adding, towards the End of the Boiling, half a Dram of Mace; in the ſtrained Liquor, diſſolve an Ounce of the bitter Purging Salt, and half an Ounce, an Ounce, or an Ounce and half of the beſt Manna, for an Apozem.

If the Patient is not eaſily wrought upon, let him take ſix Drams, or an Ounce of the Syrup of Buck-Thorn in the firſt Draught: And let the Bolus be repeated with this or the like Apozem, every other, or third, or fourth Day.

This Apozem is alſo excellent in ſome Sorts of Itch, not that which is contagious, but in that which proceeds from the Scurvy. It is likewiſe beneficial after the Small-Pox is ſhelled off, and with moſt Purges in the Room of Poſſet-Drink.

Thoſe who on a long Journey, eſpecially in Summer, are uſually coſtive, by two or three Drams of this Salt taken in a Draught or two of Spring-Water, will hereby keep themſelves ſoluble and very cool.

DISEASES IN WHICH THE BITTER WATERS AND THEIR SALTS MAY BE PREJUDICIAL.

In all Dropſies; in a continual Fever; in an Ague; the Green-Sickneſs; Spitting of Blood; Cholera Morbus; and the Palſy. Nor are they to be allowed to Women with Child, without great Circumſpection.

They may alſo prove hurtful in a Suppreſſion of Urine, which depends upon an Ulcer in the Bladder, or a Stone too big to paſs; in either of which Caſes the Patient is to abſtain from all Diuretics. But otherwiſe I have often given this Medicine ſucceſsfully; that is to ſay, in bringing away the Urine, and Stones with it not of the leaſt Size. *Grew on the Bitter Purging Salt.*

SAL CATHARTICUS HISPANICUS.

This is a Salt produced near *Madrid* from the Waters of a certain Spring, which ſpontaneouſly form themſelves in Cryſtals. It is a Salt of the neutral Kind, and in Properties exactly agrees with *Glauber*'s Salt, and 'tis even obſerved to purge more gently, ſurely and copiouſly than *Epſom* Salt. *M. Barlet. Mem. del Acad. Royal, An.* 1724.

SAL SEDATIVUM, Sedative Salt.

This Salt invented by Mr. *Homberg* is a perfect *Sal Salſum*, which ariſes in the Form of Flowers, or a Kind of white, light, dry Species of Meal, in the Diſtillation of a Solution of Borax and Oil of Vitriol, which contains a very ſtrong Acid. It neither alters the Colour of the Juice of Violets, nor acts ſenſibly on the Solution of corroſive Sublimate, nor upon the Solution

Solution of Mercury by the Spirit of Nitre; it is a Salt very uſeful in Medicine, tho' it is only ſedative, that is, tho' it only alleviates the violent Paroxyſms of Fevers for ſix or ſeven Hours, during which Time the Phyſician may preſcribe more efficacious Medicines, which could not have been otherwiſe uſed. *Hiſt. de l'Acad. Royal; An.* 1732.

SAL POLYCHRESTUM DE SEIGNETTE. This Salt, which has been uſed in Medicine for many Years, takes its Name from Mr. *Seignette* a Phyſician of *Rochelle*, who invented it, and during his Life kept it a Secret, which he only tranſmitted to his Children, who in their Turn kept the Secret ſo inviolably that no Chymiſts have hitherto been able certainly to diſcover the Myſtery, ſome taking it for one, and ſome for another Thing.

The great Reputation of this Medicine, from its firſt Diſcovery to our preſent Times, induced Mr. *Boulduc* to attempt a Diſcovery of its Compoſition.

The firſt Experiment, ſays that Author, which I made with this Salt, was to put ſome of it upon a live Coal, upon which it became fuſed, bubbled, yielded a Smoke, and at laſt left a Coal-like Matter. But among all theſe Effects, what moſt engroſſed my Attention was the Smell exhaled from it, which could not well be miſtaken by Chymiſts, ſince it was the ſame with that of Tartar, or Cream of Tartar, which do not differ from each other. I did not confine myſelf to the Fuſion and boiling of this Salt upon the Coals, becauſe theſe are Properties common to many Salts; but taſting the Coal which remained, after all the Smoke was evaporated, I found that it made nearly the ſame Impreſſion on my Tongue with fixed and lixivial Salts.

Theſe two Properties, the Smell of burnt Tartar, and the lixivial Taſte, joined to its eaſy Solution in cold Water, made me at firſt ſuſpect that it might poſſibly approach to the Nature of ſoluble Tartar. But not ſatisfied with this Proof, which to me appeared ſuperficial, I proceeded to Diſtillation. Two Ounces therefore of this Salt, puſhed by the Fire in a Retort, yielded a ſufficiently clear Liquor, with a black Oil floating on its Surface. Upon examining both, I found the Liquor to be the Spirit of Tartar, and the Oil was what we call the empyreúmatic or fetid Oil of Tartar. Then I diſtilled two Ounces of ſoluble Tartar, and the Produce was the ſame as in the preceding Diſtillation.

Hitherto I thought I had Reaſon to believe, that the Salt of Mr. *Seignette*, and ſoluble Tartar, were one and the ſame Thing, but at laſt ſome Circumſtances made me ſuſpect that they were different.

After the two Diſtillations now mentioned, I viewed the Reſiduums which to me appeared the ſame, ſince they were both a black, Coal-like, porous and rarified Matter, which I took for a calcined Tartar, and from which I could only obtain a fixed alcaline Salt. Accordingly, upon pouring Spirit of Nitre upon both, they both produced a Fermentation; however, the Reſiduum of the ſoluble Tartar apparently fermented much more briſkly than that of Mr. *Seignette*'s Salt, and carrying my Reſearches farther, I calcined both Reſiduums in an open Fire, and after having diſſolved them in Water, and filtrated them, I found in the Reſiduum of the ſoluble Tartar, a Taſte ſimply lixivial, and upon the Filtre a kind of Aſhes. But the Lixivium of Mr. *Seignette's* Salt had ſome Smell reſembling that of a rotten Egg; and when filtrated, had not the Colour of Water like that of the ſoluble Tartar, but a blueiſh Colour. Upon pouring diſtilled Vinegar upon this Solution, the Liquor became turbid, and after ſome Time, precipitated a white and apparently ſulphureous Matter.

But after all theſe Experiments, there was nothing certain to diſtinguiſh Mr. *Seignette's* Salt from the common ſoluble Tartar; and tho' I have had frequent Opportunities of converſing with the two Mr. *Geoffroys*, who frankly communicated their Sentiments on this Subject to me, I confeſs I always remained uncertain as to the Matter of which this Salt conſiſted, and for ought I know, might have done ſo all my Life, if my Friend Mr. *Groſſe* had not one Day opened my Eyes, by communicating to me what he had obſerved in making Experiments on the Salt of Kali; for he ſhewed me a Salt which gradually ſeparated or ſubſided from a Solution of that Subſtance, and which, tho' in Figure it reſembled *Glauber*'s Salt, yet it fermented with all Acids, and eſpecially very briſkly with mineral Acids, but more ſlowly with vegetable Acids, ſuch as Lemon Juice, Vinegar, and ſome others, and moſt faintly of all with Cream of Tartar. But however ſlow its Diſſolution with Cream of Tartar when cold was, yet it was in proceſs of Time perfectly diſſolved; and Mr. *Groſſe* added, that this Mixture deſerved to be examined by Evaporation and Cryſtallization.

I immediately laid hold of this Hint, and imagined that this Mixture would afford a new Species of neutral Salt, or ſoluble Tartar; and from that Time forth, I ſuſpected that Mr. *Seignette* endeavouring to make a new Cream of Tartar, which, as is well known, is nothing elſe but Tartar rendered ſoluble by the fixed Alcaline Salt of the ſame Tartar, might have believed, with ſome other modern Chymiſts, that all alcaline Salts obtained from Plants by Calcination, are the ſame, and that the Fire leaves no eſſential Part of the Plant from which they are obtained; that conſequently one might be indifferently ſubſtituted for another, and at laſt, that according to this Principle, having eaſy Acceſs to the Salt of Kali, he could of it make his ſoluble Tartar; and that upon executing this Deſign, he had obtained from it a Salt, which was not found to be preciſely the common ſoluble Tartar, known for ſo long a Time, but a new Salt, or rather a new Species of ſoluble Cream of Tartar, to which he afterwards gave the pompous Epithet of *Polychreſt*, on account of the many good Effects it produced.

In this Opinion I remained for a long Time, without making any Trial whether it was really ſo or not, tho' I had frequently communicated my Sentiments to ſeveral Chymiſts upon this Subject.

But at laſt I reſolved to put the Deſign in Execution, which Mr. *Geoffroy* did at the ſame Time; and tho' none of us knew that the other was engaged in this Taſk, yet we both found preciſely the ſame Thing.

In order to make Mr. Seignette's Salt, *we take the Salt of* the beſt calcin'd, whiteſt and hardeſt *Alicant* Kali, reduced to a Powder; of this we make a ſtrong Lixivium by boiling in Water, and filtrate the Lixivium, which is very tranſparent.

Then we take ſeparately ſome Cream of Tartar in Powder, upon which we pour this Lixivium, when warm. This Mixture excites a Fermentation, which laſts for a conſiderable Time, and which even after it has ceaſed, is renewed at certain Intervals. In the Time of this Fermentation, the Cream of Tartar is reſolved; after which there is a copious Precipitation of a ſpongeous and light Earth, which is to be ſeparated from the Liquor by Filtration. Then we evaporate this Mixture to the Conſumption of about a third Part. Then it is to be left at reſt in earthen Veſſels, by which Means, after ſome Days we find Cryſtals tranſparent like Cryſtal, which when diſengaged, and not ſupported by the Veſſels, are formed into Cylinders or Columns, which through all their Length have many flat Surfaces, above nine of which I have ſometimes counted, tho' they are not generally found in ſo great a Number.

In my Opinion, it is impoſſible exactly to determine the preciſe Proportion of the Salt of Kali, and the Cream of Tartar, ſince ſome Kinds of Kali contain a larger Quantity of Salt than others. But the moſt natural Way of finding this Proportion, is to diſſolve in the Lixivium as much Cream of Tartar as it will receive, that is, to the Point of Saturation.

A Lixivium of ſix Pounds of Kali generally abſorbs two Pounds and three or four Ounces of Cream of Tartar, and when the Kali is very white and richly impregnated with Salt, the Lixivium of ſix Pounds ſome times abſorbs an equal Weight of Cream of Tartar. This Difference, as we may eaſily conceive, can only depend upon the Quality of the Kali, according as it is more or leſs impregnated with alcaline Salt.

But when I took the Salt which ſubſided in the Solution or Lixivium of Kali, and the Configuration of which nearly reſembles that of *Glauber*'s Salt, half a Pound of this Salt diſſolved, eaſily received thirteen or fourteen Ounces of Cream of Tartar, and the Mixture precipitated ſcarcely any Earth. This is the juſteſt Proportion I can propoſe for the Subſtances which enter the Compoſition of Mr. *Seignette*'s Sal Polychriſtum. If we only wait for a ſhort Time, we have the Cryſtals of Kali, after which the Mixture is more equally made, and is not ſubject to the Precipitation of the different hetorogeneous Subſtances which the Kali communicates to the Lixivium.

In a Word, my Salt when formed into Cryſtals, and compared with that of Mr. *Seignette* alſo cryſtallized, was found to be preciſely the ſame in all Circumſtances; for they are figured like each other, are eaſily diſſolved in cold Water, when reduced to a Powder, have the ſame Taſte, and communicate a certain Coldneſs to the Tongue. When put upon a live Coal, they become fuſed and bubble, yield the Smell of burnt Tartar, and are at laſt reduced to a black and ſpongeous Coal, which yields Tartar.

If after this Examination, we ſhould doubt of the Conformity of this Salt with Mr. *Seignette*'s, we may be convinced of it by an Experiment, which makes a ſpeedy Decompoſition of it: For if we diſſolve equal Quantities of both Salts ſeparately in warm Water, and pour into each Solution Oil of white Vitriol, till its Action ceaſes, in Proportion as theſe Solutions become cold, a ſaline Concretion is formed, which when examined, is found to be true Cream of Tartar, in Cryſtals regenerated or ſeparated from the Alcali, whilſt the

Oil of Vitriol is united with it, and afterwards by Cryſtallization, forms with it a *Glauber*'s Salt, in the ſame Manner as if this Oil had been poured upon the Lixivium of the Kali.

Mr. *Seignette*'s Sal Polychriſtum is therefore a Cream of Tartar rendered ſoluble by the Alcali of Kali. *Mem. de l'Acad. Royal des Sciences, An.* 1731.

SAL CORALLII. Salt of Coral. See CORALLIUM.

SAL CORUM CERVI. Salt of Hartſhorn.

SAL EX DUOBUS. A Name for the ARCANUM DUPLICATUM, which ſee.

SAL EBSHAMENSE. See SAL CATHARTICUM AMARUM.

SAL ENIXUM PARACELSI. See ENIXA.

SAL ESSENTIALE. An Eſſential Salt. See ACETOSA.

SAL FIXUM. A fixed Salt. See ALCALI.

SAL FLUOR. An acid Salt in a liquid Form, before it is fixed by uniting with a terreſtrial Subſtance. *Lemery*'s *Pharm. Univerſ.*

SAL FOSSILE. Sal Gemmæ.

SAL GEMMÆ. See SAL ALIMENTARIS.

SAL INDICUM. Sugar. See SACCHARUM.

SAL JOVIS. Salt of Tin. See JUPITER.

SAL LIXIVIOSUM. A lixivial Salt. See ALCALI.

SAL MARINUM. Sea Salt. See SAL ALIMENTARIS.

SAL MARTIS. Salt of Iron. See MARS.

SAL MEDIUM. A Neutral Salt.

SAL MERCURIALE. *Hartman* informs us, that this imports *Sal Ammoniac*. But ſome call Mercury Sublimate by this Name.

SAL MIRABILE GLAUBERI. *Glauber*'s Salt. See SAL ALIMENTARIS.

SAL NEUTRUM. A Neutral Salt. See NEUTER.

SAL NITRI. Nitre. See NITRUM.

SAL POLYCHRESTON. See NITRUM.

SAL PRUNELLÆ. See NITRUM.

SAL SUCCINI. See AMBRA.

SAL SULPHURIS. Salt of Sulphur.

Take of Sal Polychreſtum, four Ounces, powder it in a Glaſs Mortar, with a Peſtle of the ſame; put it into a flat wide-mouth'd Glaſs, and add to it of the Spirit of Sulphur two Ounces, ſtir them well together, and evaporate in a Sand Heat, which will leave a pleaſant acid Salt, which put up in a Vial for Uſe.

This is not, ſtrictly ſpeaking, the Salt of Sulphur, but Nitre fixed by Sulphur, and afterwards impregnated with its Spirit. It is diuretic, and if given in a large Doſe, cathartic, as moſt Salts. In the former Intention it is given from ten Grains to one Dram, in the latter up to four Drams, diſſolv'd in Broth, or any proper Vehicle warm.

SAL TARTARI. Salt of Tartar.

SAL THERIACALE.

The Ancients made Uſe of a Compound, which they call Salt of Vipers, or *Sal Theriacale*.

Dioſcorides deſcribes it, as made by burning a Viper in a new earthen Pot, with ſome Figs, common Salt and Honey, and when it was reduced to Aſhes, adding a little *Spica Nardi* or *Malabathrum*. *Pliny* adds nothing to the Viper, but the Juice of Fennel, and a Grain of Incenſe. But *Galen*, *Paulus* and *Aetius* deſcribe a much more compound *Sal Theriacale*. *Le Clerc*.

SAL VITRI. Salt of Glaſs, or Sandiver. See AXUNGIA VITRI.

SAL VOLATILE. A Volatile Salt. See AMMONIACUM, and ALCALI.

SAL VOLATILE OLEOSUM. See AMMONIACUM.

SAL URINOSUM. A Urinous Salt; that is, a volatile Salt, which riſes in the Diſtillation of Animals, and Vegetables, and ſmells ſomewhat like Urine.

Beſides the Salts above taken notice of, there are ſome very curious Salts mentioned in the Memoirs of the Royal Academy of Sciences; as the Salt of *Dauphiny*; the *Spaniſh* Salt; and the ſedative Salt.

SALT OF DAUPHINY.

This Salt was firſt of all accidentally diſcovered near *Grenoble*, the Capital of *Dauphiny*, by ſome Miners, who ſearching in ſome of the old metallic Mines, which as yet remain'd open, miſſed what they ſought for, but in its ſtead found an Earth impregnated with ſmall ſhining Subſtances, which ſome of them knew to be of a ſaline Kind. Thus imagining that they had found an Earth abounding with Salt Petre, they made a ſtrong Lixivium of it, and perceived, in the Evaporation of this Lixivium, Cryſtals, which bore ſome, tho' a very imperfect, Reſemblance to thoſe of Salt Petre.

But tho' the Cryſtals of this Salt had borne a greater Reſemblance to thoſe of Salt Petre than they did, it does not hence follow, that the former ought to be taken for the latter, if the other ſpecific and diſtinguiſhing Properties of Salt Petre were wanting; ſince the Configuration alone of any Salt does by no means aſcertain its Eſſence or Characters.

But in order the more effectually to diſcover what this Salt is, we ſhall conſider its external Properties, and the Principles or Elements of which it is compoſed.

This Salt then generally comes from *Dauphiny* in large Lumps, the inferior Part of which is about an Inch in Circumference, irregular, white, opaque, and pretty firm; whereas the ſuperior Part, which is about two or three Inches in Circumference, repreſents a Cluſter of ſmall, tranſparent, and ſhining Cryſtals, ſome of which are diſpoſed in flat Laminæ: But the greater Part are formed into oblong Squares, tho' ſo much interfering with each other, that they ſeem to have been prevented in the Configuration to which they had a natural Tendency; for there are very few of them which form ſmall Columns perfectly, conſiſting of four Sides.

This Irregularity and Confuſion is the Effect of too precipitate an Evaporation and Cryſtalization. But this Salt, in whatever State and Condition, is eaſily diſſolved in about an equal Quantity of common Water, is friable, and becomes tarniſhed by Heat, and in proceſs of Time by the Influence of the Air. It is eaſily melted on a live Coal, but does not become fuſed and take Flame like Salt Petre; for it only bubbles by means of the Water it contains, which being diſſipated by the Heat of the Fire, it is transformed into a ſaline Calx. This Salt, when taſted firſt, conveys a ſenſible Bitterneſs to the Tongue, which is ſoon ſucceeded by a Senſation of Cold.

By theſe Marks and Properties, tho' only external, we generally uſe to judge of the *Sal Mirabile Glauberi*, ſimilar to which is the Salt of *Dauphiny*, ſince it is poſſeſſed of the ſame Qualities. But that the Analogy, or rather Identity, of theſe two Salts may be the more effectually evinced, we ſhall enquire into their conſtituent and component Principles.

With reſpect, therefore, to artificial *Glauber*'s Salt, we certainly know that it conſiſts of a ſaline and an earthy Principle; the former is a fixed vitriolic Acid; and the latter, an Earth of Sea-Salt with which the Acid mixes and incorporates itſelf; ſo that the Salt of *Dauphiny* muſt have the ſame two Principles, in order to be entirely ſimilar to that of *Glauber*.

Tho' it would be ſufficient to prove the ſaline Principle of the Salt of *Dauphiny*, and deduce the other from it as a juſt Conſequence, ſince we are convinced that a vitriolic Acid can with no known Subſtance, except the Baſis of common Salt, form a Salt of the ſame Configuration and Properties which *Glauber*'s Salt ought to be poſſeſſed of, yet I ſhall not entirely overlook the ſecond or earthy Principle of the Salt of *Dauphiny*.

In order, therefore, to prove the true Principle of the Salt of *Dauphiny*, 'tis needleſs to obſerve, that by means of inflammable Subſtances, it is eaſily converted into a Liver of Sulphur, which in this Change can be nothing but a vitriolic Acid. Nor ſhall I inſiſt upon the Precipitations which it produces of Lead diſſolved in Aqua Fortis, or of Sugar of Lead diſſolved in Vinegar. I ſhall only confine myſelf to its Effects with Quick-Silver; and upon one Experiment made for this Purpoſe build another, in order to prove its earthy Principle.

I therefore diſſolve an Ounce of Quick-Silver in an equal Quantity, or a little more, of good Spirit of Nitre: I pour this Solution into five Ounces of the Salt of *Dauphiny*, diſſolved in common Water. Upon which the vitriolic Acid, contained in the Salt of *Dauphiny*, immediately abandons its earthy Baſis to the Spirit of Nitre, from which, as being the ſtronger of the two, it ſeparates the Quick-Silver; and after having intimately united itſelf with it, they both ſubſide to the Bottom of the Veſſel, in a yellow Powder like Turbith Mineral, which is commonly prepared with Quick-Silver and Oil of Vitriol.

After having removed this yellow Powder, which is really a Turbith Mineral, as we ſhall afterwards ſhew; and having waſhed and dried it, I mix an Ounce of it with two Ounces of well-dried Sea-Salt. This Mixture I puſh in a Sand-Heat, in a Veſſel whoſe ſuperior Part is very convex; upon which a new Scene appears, for the Acid of the Sea-Salt proves ſuperior, and in its Turn ſeparates the Quick-Silver from the vitriolic Acid concentrated in the Turbith, and riſing together to the Top of the Veſſel, they form a kind of ſublimate Mercury; whilſt the vitriolic Acid finding an Earth like that which it had abandoned to the Spirit of Nitre, and which in this Caſe is the Earth left by the Acid of the Sea-Salt, it joins itſelf to it, and remains with it at the Bottom of the Veſſel, in the Form of a ſaline Powder; which, when diſſolved in Water, regenerates a Salt perfectly ſimilar to that which I had employed to precipitate the Mercury, having the ſame Configuration of Cryſtals, the ſame Properties, the ſame Principles; and, in a word, the genuine Characteriſtic of *Glauber*'s Salt.

Thoſe who are ignorant of Chymiſtry may poſſibly be ſurprized

prized at the different Changes which happen in theſe two Experiments: For in the former, which is the Mixture of the Salt of *Dauphiny*, with a Solution of Mercury, the vitriolic Acid contained in this Salt, enjoys its full Force. "For, almoſt on all Occaſions, it is ſuperior to other A-"cids; and according to particular Occurrences, ſeparates "from them the Salts and Earths they contain. It, al-"ſo, ſeparates from them their metallic Subſtances, as "it does in this Caſe with reſpect to the Mercury, which "the Spirit of Nitre had diſſolved. It alſo forces this "Acid to yield to it, and is afterwards precipitated with it "into a Turbith Mineral." But a Circumſtance apparently ſmall produces a very conſiderable Change in the ſecond Experiment, which is the Mixture of this Turbith with Sea-Salt. Chymiſtry, as well as other Arts, has Exceptions from its general Rules, one of which occurs in this Experiment, which is, "That every time that certain metallic "Subſtances are diſſolved by any Acid, in which there is "Sea-Salt, or its Principle, or if theſe are added to the "Acids, they deprive them of their metallic Subſtances, be-"cauſe they have more Analogy with theſe than with the "other Parts of ſuch Acids. Perhaps this Analogy or Rela-"tion depends on the mercurial Nature of theſe metallic "Subſtances." *This Effect is, however, produced by the ſa*line Principle of this Salt upon the Mercury; for it ſeparates it from the vitriolic Acid, which kept it confined in the Turbith, and raiſes it along with itſelf into a Sublimate, leaving its Earth behind it, which Effect was in its Turn produced by the vitriolic Acid.

By theſe two Experiments the conſtituent Principles of the Salt of *Dauphiny* are rendered conſpicuous: For it quickly precipitates Mercury into a Turbith Mineral, which can only be done by a vitriolic Acid. This Salt has, therefore, ſuch an Acid for its ſaline Principle.

The Salt of *Dauphiny* muſt, alſo, for its other Principle, have the Earth of Sea-Salt: Becauſe, as we have already obſerved, the vitriolic Acid cannot, without the Concurrence of that Subſtance, form a Salt poſſeſſed of ſuch Properties, and ſuch a Configuration of Cryſtals, as thoſe of the Salt of *Dauphiny*, and which it has in common with the Salt of *Glauber*. This is confirmed by the ſecond Experiment, where the vitriolic Acid of the Salt of *Dauphiny*, which was added to the Mercury, finding in the Sea-Salt an Earth ſimilar to that which it had abandoned to the Spirit of Nitre, again forms with it a Salt cryſtalized in the ſame manner, and poſſeſſed of the ſame Properties with the firſt I employed.

Thus the Salt of *Dauphiny* has the ſame Principles with *Glauber*'s Salt, and is for that Reaſon a genuine *Glauber*'s Salt of the natural Kind, becauſe Art contributes nothing to its Production; ſo that 'tis to be hoped a due Regard will in proceſs of time be paid to this Salt, ſince it produces the ſame Effects on the human Body with a true *Glauber*'s Salt, and is perfectly poſſeſſed of all its Characteriſtics; which are, That it does not become moiſt in the Air; does not alter the Tincture of Tournſol and Flowers of Violets; and that itſelf is not altered by the Oil of Vitriol, like other Salts, which ſtill retain ſome Portion of Sea-Salt. *Mem. del Acad. Royale des Sciences, An.* 1727.

1. SALAMANDRA Offic. Schrod. 5. 345. Aldrov. de Quad. Ovip. 639. Schw. Rept. 163. Geſn. de Quad. Ovip. 80. *Salamandra terreſtris*, Raii Synop. A. 273. Jonſ. de Quad. 137. *Salamandra terreſtris maculis luteis diſtincta*, Charlt. Exer. 28. THE SALAMANDER, or QUENCH-FIRE.

The Salamander is a Species of Lizard, of a black Colour, mark'd with yellow Spots. Its Head and Belly are thicker than thoſe of the common green Lizard, but its Tail is ſhorter. It has a ſharp Snout and full Eyes. Each of its Feet is armed with four pretty big Claws, but it is much ſlower in its Pace than the common Lizard. On its Back is a Figure much reſembling that of a Croſs, and it is mark'd with two Lines, which reach from the Neck to the Tail. There are two kinds of Salamanders, the terreſtial and the aquatic; the firſt is found in cold and moiſt Places, the other delights in Fountains and running Streams.

Salamanders are found in *Italy*, *Germany*, and in *Normandy*. It was formerly believed, that they could live in the Fire, becauſe it was obſerved that they remained a longer Time in the Fire, without being conſumed, than other Animals; becauſe they are full of a lacteous and viſcid Humour, which for ſome time diminiſhes the Heat of the burning Coals, but at length the Fire penetrates and burns them. The Bite of this Reptile is eſteemed as dangerous as that of a Serpent. In Biting it diſcharges a lacteous, virulent, and very acrimonious Juice. It contains a good Quantity of cauſtic volatile Salt, Oil and Phlegm.

The Salamander is corroſive, burning and depilatory, being outwardly applied. It can hardly be touched without hurting the Fingers. *Lemery des Droguez.*

The Aſhes of a Salamander are an excellent and effectual Cure for ſcrophulous Ulcers, being ſprinkled on the Parts affected. *Schroder.*

2. SALAMANDRA AQUATICA. This is diſtinguiſhed in the following manner:

Lacertus aquatilis, Offic. Schrod. 5. 343. *Lacertus aquaticus niger*; Mer. Pin. 169. *Salamandra aquatica*, Raii Synop. A. 273. Charlt. Exer. 28. Rondel. de Aquat. 2. 230. *Salamandra aquatica*, *aliis Lacertus aquaticus*, Jonſ. de Quad. 137. *Scincus aquaticus quibuſdam.* THE WATER EFT.

It is found in Fiſh-Ponds and ſtanding Waters. The Powder of it is commended for facilitating the Evulſion, or Drawing the Teeth.

SALAPPA. Jalap.

SALCÆ OLEUM. Oil of *Salca*. The beſt Preparation of Oil of *Salca*, and as I prepared it in *Alexandria*, ſays *Aetius*, is in the following Manner:

Take of Aſpalathus, half a Pound; of Xylobalſamum, nine Ounces; Cyperus, four Ounces; Elecampane, both Sorts of Iris, each half a Pound; Calamus Aromaticus, eighteen Ounces; Flowers of the Juncus Odoratus, two Ounces and half; of fat Storax two Ounces; two *Indian* Nuts; Malabathrum, eight Ounces; Spikenard, one Ounce; Cloves, Zedoary, each one Ounce and an half; Amomum, three Ounces; Caſia, two Ounces; Caſtus, one Ounce; Myrrh, one Ounce; Hypnum (a Species of Moſs) Xylocaſia, each three Ounces; Oil, ten Sextaries. Then boil together in the Oil the Xylobalſamum, Iris, Cyperus, Elecampane, and Xylocaſia, decorticated, groſly pounded, and macerated two or three Days in Water; ſtir them continually, inſtilling Water by Degrees, when they begin to grow dry. When they have boiled three Hours or more, take them off, and let them ſtand covered for a whole Night. The next Day take them out, and ſeparating the Water from the Oil, boil them again in pure Water mixed with a ſmall Quantity of Wine; and as ſoon as they begin to boil up, put in the Calamus, the Flowers of the Juncus Odoratus, all firſt ſteeped in old ſcented Wine. The third Day take them out in like manner as before, and adding more Water, boil them a third Time, putting in the reſt of the Ingredients as ſoon as they begin to boil. They make a ſecondary Sort, which is done by adding ſix Sectarii of Oil to what remains after the third; and after boiling it a ſufficient time, adding three Ounces of good white Myrrha Stacte; half a Pound of *Siroma* [Water of Opobalſamum;] half a Pound of Maſtich; and an Ounce of good Storax. Oil of *Salca* is uſed by the Women to anoint their Heads, and what I have here given is by far the beſt Way of preparing it. *Aetius, Tetrab.* 1. *Serm.* 1.

Another Preparation of Oil of *Salca.*

Take of Oleum Omphacinum, twenty Sectarii; Iris Illyrica, one Pound; Amomum, one Ounce and an half; Aſpalathus, Hypnum, each one Pound; Calamus Aromaticus, two Pounds; Cloves, Malabathrum, Carpobalſamum, each one Pound; Xylocaſia, five Ounces; Caſia, four Ounces; Coſtus, fat Storax, Saffron, each one Ounce; Myrrh, Zedoary, each three Ounces; Spikenard, four Ounces. Boil them all in Water, and manage them as it is directed in the former Preparation. *Aetius, Tetrab.* 4. *Serm.* 4. *Cap.* 114.

SALEFUR. Garden-Saffron. *Rulandus.*

SALEP. See ORCHIS.

SALICARIA.

The Characters are;

The Calyx is tubulous, ſtriated, and multifid; the Flowers are roſaceous, hexapetalous, and grow out of the upper Inciſures on the Inſide of the tubulated Calyx, almoſt in a Series of Whorls, and are furniſhed with a Multitude of Stamina, ſometimes no fewer than eighteen. The Ovary, which is adorned with a long Tube, that has an Apex ſhaped like a Baſon, when ripe becomes an ovated, bicapſular Shell involved in the Calyx, and full of ſmall Seeds.

Boerhaave mentions four Sorts of *Salicaria*, which are;

1. Salicaria; vulgaris; purpurea; foliis oblongis. *Tourn. Inſt.* 253. *Boerh. Ind. A.* 221. *Raii Synop.* 3. 367. *Lyſimachia purpurea ſpicata.* Ger. 386. Emac. 476. Park. Theat. 546. Raii Hiſt. 2. 1036. *Lyſimachia ſpicata purpurea ſorte Plinii*, C. B. P. 246. *Lyſimachia purpurea quibuſdam ſpicata*, J. B. 2. 902. *Blattaria rubra ſpicata major, glabra, communis folio*

folio acuto, Hiſt. Oxon. 2. 490. SPIKED WILLOW-HERB.

It grows in marſhy Places, and by the Banks of Rivers, and flowers in *July*. The Herb, which is uſed in Medicine, is an Opthalmic. *Mont.* The diſtilled Water is a preſent Remedy for Wounds, Punctures and Sugillations of the Eyes, as well as Dimneſs of Sight and all other Infirmities incident to thoſe Parts. *Park.* It is a Specific in Inflammations. *Raii Hiſt.* The Decoction of the Herb is an excellent Remedy for the epidemic Diarrhœa of *Ireland*. *Threk. Synop. Hib.*

2. Salicaria; purpurea; foliis ſubrotundis. *T.* 253. *Lyſimachia, ſpicata, lanuginoſa, folio ſubrotundo, flore purpureo.* H. R. Par. *Blattaria, rubra, ſpicata, major, lanuginoſa, folio ſubrotundo.* M. H. 2. 490.

3. Salicaria; Hyſſopi folio, latiore. T. 253. Lyſimachiæ ſpicatæ, purpureæ affinis, hyſſopifolia. H. L. 397. Hyſſopifolia, major, latioribus foliis, C. B. P. 218. Hyſſopifolia, aquatica, J. B. 3. 792.

4. Salicaria; Hyſſopifolia; anguſtiore. *T.* 253. *Hyſſopifolia, minor, anguſtioribus foliis.* C. B. P. 218. M. H. 3.613. *Boerh. Ind. Alt. Plant. Vol.* 1.

There has been no Virtue obſerved to belong to this Plant, tho' it be the *Lyſimachia* of *Dioſcorides*, and it only ſerves as an Ornament in Gardens, on account of its beautiful Flowers. *Hiſt. Plant. Aſcript. Boerhaave*, p. 299.

SALICORNIA.

The Characters are;

It is aphyllous, ſmooth, ſucculent, and has the Appearance of Houſeleek, conſiſting of Scales articulated box-wiſe. The Flower is apetalous, naked, and grows out of the Commiſſures of the Scales. The Fruit is a Veſicle containing one Seed.

Boerhaave mentions but one Sort of *Salicornia*, which is, Salicornia *Dod. p.* 82. *Salicornia, geniculata, annua.* T. Cor. 51. *Kali, geniculatum, majus.* C. B. P. 289. M. H. 2. 611. *Cali, geniculatum, ſive Salicornia.* J. B. 3. 704. *Boerh. Ind. Alt. Plant. Vol.* 2.

A Decoction of the Leaves is very opening, provokes Urine and the Menſes, accelerates the Birth, expels the Fœtus and Secundines, and purges watry Humours, whence it is of Service in a Dropſy. Its Aſhes are uſed in making Soap and Glaſs; and being infuſed in Water, cure the Itch and all cutaneous Diſeaſes, the Parts affected being waſhed therewith. *Hiſt. Plant. Aſcript. Boerhaave.*

SALIVA.

By *Saliva* we mean in general, that Fluid by which the Mouth and Tongue are continually moiſtened in their natural State. This Fluid is principally ſupplied by Glands, called for that Reaſon Salival Glands, of which they commonly reckon three Pairs, two Parotides, two Maxillares, and two Sublinguales. Theſe are indeed the largeſt, and they furniſh the greateſt Quantities of Saliva; but there are a great Number of other leſſer Glands of the ſame Kind, which may be reckoned Aſſiſtants or Subſtitutes to the former. All theſe may be determined ſalival Glands, and they may be enumerated in the following Manner:

Glandulæ Parotides.	Glandulæ Linguales.
Glandulæ Maxillares.	Amygdalæ.
Glandulæ Sublinguales.	Glandulæ Palatinæ.
Glandulæ Molares.	Glandulæ Uvulares.
Glandulæ Buccales.	Glandulæ Arytenoidææ.
Glandulæ Labiales.	Glandula Thyroidæa.

The Parotides are two large, whitiſh Glands, irregularly oblong and protuberant, ſituated on each Side, between the external Ear and the poſterior or aſcending Branch of the lower Jaw, and lying on ſome Part of the neighbouring Maſſeter Muſcle. The ſuperior Portion of this Gland lies before the cartilaginous Meatus of the Ear, and touches the Apophyſis Zygomatica of the Os Temporis; and it is extended forwards and backwards under the Lobe of the Ear, as far as the Maſtoide Apophyſis.

From the anterior and ſuperior Portion of this Gland, a white membranous Duct or Canal is produced by the Union of a great Number of ſmall Tubes, repreſenting ſo many Roots. This Duct runs obliquely forwards on the Outſide of the Maſſeter, and then perforates the Buccinator from without inward, oppoſite to the Interſtice between the ſecond and third Dentes Molares, where the Hole or Orifice repreſents the Spout of an Ewer.

This Canal is named Ductus ſalivalis Stenonis, or Ductus Superior. It is about the twelfth Part of an Inch in Diameter, and in ſome Subjects is partly covered by ſmall glandular Bodies, united with it in different Quantities. The Arteria and Vena Angularis run up over this Duct, and the Portio Dura of the Auditory Nerve runs through the Gland itſelf; and it alſo receives Filaments from the ſecond vertibral Pair.

The maxillary Glands are ſmaller and rounder than the Parotides, and are ſituated each on the Inſide of the Angle of the lower Jaw, near the Muſculus Pterygoidæus Inferior. From the Inſide, or that which is turned to the Muſculus Hyo-gloſſus, each of them ſends out a Duct in the ſame Manner as the Parotides, but it is ſmaller and longer, and goes by the Name of Ductus Salivalis *Whartoni*, or Ductus Inferior.

This Duct advances on the Side of the Muſculus Genio-gloſſus, along the inner Part and ſuperior Edge of the Glandula ſublingualis, to the Frenum of the Tongue, where it terminates by a ſmall Orifice in form of a Papilla.

The Glandulæ Sublinguales are likewiſe two in Number, of the ſame Kind with the former, ſomething oblong, and flatted like a blanched Almond. They are ſituated under the anterior Portion of the Tongue, one on each Side, near the lower Jaw, on the lateral Portions of the Muſculi Mylo-Hyodæi, which ſuſtain them. The two Extremities of each Gland are turned backward and forward, and the Edges obliquely inward and outward.

They are covered on the upper Side by a very thin Membrane, which is a Continuation of the Membrane that covers the under Side of the Tongue. They ſend out laterally ſeveral ſmall ſhort Ducts, which open near the Gums by the ſame Number of Orifices, all ranked in the ſame Line, at a ſmall Diſtance from the Frenum, and a little more backward. In many Animals we find particular Ducts belonging to theſe Glands, like thoſe of the Glandulæ Maxillares; but they are not to be found ſo diſtinctly in Men. The Muſculi Genio-gloſſi lie between the two ſublingual Glands, and alſo between the two maxillary Ducts.

The Molares are two Glands nearly of the ſame Kind with the former, each of them being ſituated between the Maſſeter and Buccinator; and in ſome Subjects they may eaſily be miſtaken for two ſmall Lumps of Fat. They ſend out ſmall Ducts, which perforate the Buccinator, and open into the Cavity of the Mouth, almoſt over-againſt the laſt Dentes Molares; and from thence M. *Heiſter*, who firſt deſcribed them, called them Glandulæ Molares.

All the Inſide of the Cheeks, near the Mouth, is full of ſmall glandulous Bodies, called Glandulæ Buccales, which open by ſmall Holes or Orifices through the inner Membrane of the Mouth. The Membrane which covers the Inſide of the Lips, a Continuation of that on the Cheeks, is likewiſe perforated by a great Number of ſmall Holes, which anſwer to the ſame Number of ſmall Glands, called Glandulæ Labiales. The Glandulæ Linguales are thoſe of the Foramen cæcum of the Baſis of the Tongue.

The Glandulæ Palatinæ belong to the Arch and Septum of the Palate; the Glandulæ Arytenoidææ are deſcribed under the Article LARYNX. The uvular Glands are only a Continuation of the Membrane of the Palate, in form of a ſmall Bunch of Grapes. We might likewiſe reckon among the ſalival Glands, thoſe of the ſuperior Portion of the Pharynx; and alſo the glandular Bodies of the Membrana Pituitaria of the Nares, and of the Sinuſes that communicate with theſe.

The Amygdalæ are two glandular Bodies of a reddiſh Colour, lying in the Interſtices between the two lateral half Arches of the Septum Palati, one on the right the other on the left Side of the Baſis of the Tongue. Their Appearance is not unlike that of the Outſide of an Almond Shell, both becauſe their Surface is uneven, and becauſe it is full of Holes big enough to admit the Head of a large Pin.

Theſe Holes, which repreſent a Sieve or a Piece of Network, are continued to an irregular Sinus or Cavity within the Gland, filled commonly with a viſcid Fluid, which comes from the Bottom of the Sinus, and is from thence gradually diſcharged through theſe Holes into the Throat. To ſee the true Structure of the Amygdalæ, they muſt be examined in clear Water, having firſt been waſhed in lukewarm Water, and handled very gently.

The Thyroide Gland is a large whitiſh Maſs, which covers the anterior Convex Side of the Larynx. It ſeems, at firſt Sight, to be made up of two oblong glandular Portions, united by their inferior Extremities, below the Cricoide Cartilage, ſo as to reſemble a Creſcent, with the Cornua turned upward. It is of a moderate Thickneſs, and bent laterally like the Thyroide Cartilage from which its Name is taken. The two lateral Portions lie on the Muſculi Thyro-Hyoidæi, and the Middle, or inferior Portion, on the Crico-Thyroidæi. The Thyro-Pharyngæi Inferiores ſend Fibres over this Gland, and they communicate on each Side by ſome ſuch Fibres with the Sterno-Thyroidæi and Hyo-Thyroidæi.

This Gland ſeems to be of the ſame Kind with the other ſalival Glands, but it is more ſolid. Some Anatomiſts thought they had diſcovered the excretory Duct, but they miſtook a Blood-Veſſel for it. We ſometimes meet with a Kind of glandular

glandular Rope, which runs before the Cartilago Thyroides, and diſappears before the Baſis of the Os Hyoides.

This glandular Rope goes out from the common Baſis of the lateral Portions of the Thyroide Gland, and is loſt between the Muſculi Sterno-Hyodæi, behind the Baſis of the Os Hyoides, or between that Baſis and the Epiglottis. There are likewiſe ſmall Openings on the Side of the anterior Ligament of the Epiglottis, or that by which it is connected to the Baſis of the Tongue. One of theſe Openings appears like a ſmall Papilla; and this is the fartheſt that I have been able to trace the glandular Rope. *Winſlow's Anatomy.*

The Saliva is a thin pellucid Humour, incapable of being concreted by the Fire, almoſt without Taſte and Smell, and frothing much when ſhaken. It is an Humour of the glandular Kind, ſecreted from the pure arterial Blood: In hungry Perſons it is fluid, acrid, and copiouſly diſcharged. And in thoſe who have faſted long, it is highly acrid, penetrating and reſolvent. In farinaceous and ſucculent Vegetables, it not only produces a Fermentation, but alſo augments one already begun. It is ſwallowed not only by Brutes, but alſo by human Creatures in a ſound State, even when aſleep. Too copious an Evacuation of it made voluntarily, produces Loſs of Appetite, bad Digeſtion, and an Atrophy. It conſiſts of a pretty large Quantity of Water and Spirits, and is, alſo, of a ſaponaceous Nature in conſequence of a ſmall Quantity of Oil and Salt it contains.

By Manducation, therefore, the Saliva is expreſſed and accurately mixed with the attenuated Food, which contributes, firſt, to the Aſſimilation of the Aliments to the Nature of the Body to be nouriſhed; ſecondly, to the due Mixture of the oleous with the aqueous Parts; thirdly, to the Solution of the ſaline Parts; fourthly, to Fermentation; fifthly, to a Change of the Taſte and Smell of the Aliments; ſixthly, to an Augmentation of the inteſtine Motion; ſeventhly, to a momentaneous Relief from Hunger; and eighthly, an Application of the ſapid Parts, tho' it is inſipid itſelf.

The Saliva, therefore, which is in a curious and ſurpriſing Manner elaborated from the arterial Blood, and which, when diſcharged, is mixed with the Aliments, cannot on other Occaſions be evacuated without bad Conſequences; but after it is ſwallowed, has performed its Offices, and is corrected by a freſh Circulation, it aſſumes a better Quality, as is obvious from certain Diſorders, the Remedies appropriated to their Cure, and their ſeveral Criſes.

An exceſſive Evacuation of the Saliva diſturbs the firſt, and conſequently all the ſucceding Concoctions; induces Thirſt and Dryneſs of the Parts; generates black Bile, and forms a Tabes and Atrophy. If the Saliva is not at all ſecreted into the Mouth, or ſecreted in a ſmaller Quantity than uſual, the Manducation, Taſte, Deglutition and Digeſtion of the Aliments, are hindered, and the Patient's Thirſt is augmented. *Boerhaave Inſtitut.*

SALIVALES DUCTUS. The Salival Ducts. See SALIVA.

With reſpect to theſe Ducts, Mr. *Monro* gives the ſubſequent Caſe in the *Medical Eſſays, Vol.* 2.

Mr. *Ker* of *Frogton*, a young Gentleman of a delicate Conſtitution, and threatened with a Conſumption from an Ulcer in his Lungs, was ſeized, after riding in a cold Night, with a very hard Tumour about the Middle of his left Cheek, which the Gentleman who attended him, endeavoured at firſt to reſolve; but obſerving a Suppuration to come on, it was opened with a Lancet on the Inſide, and afterwards an external Orifice was alſo made, and Eſcharotics were applied to waſte down the hard Stool of the Tumor that ſtill remained. When no more Hardneſs was felt, his Surgeon endeavoured to incarn and cicatrize, but was diſappointed by a conſtant plentiful Diſcharge of a thin clear Lymph. The Oriſice was again enlarged, and it was dreſſed a conſiderable Time with Aſtringents and Dryers, in different Forms, but without any Succeſs.

In *September* 1727, being accidentally in the Neighbourhood of *Kelſo*, where Mr. *Ker* lived, I was ſent for to adviſe with Dr. *Abernethy* and Dr. *Scot*, Phyſicians there, and with Mr. *Jamieſon* Surgeon concerning his Cure. The external Orifice in his Cheek was as large as would have received the Point of my Thumb, and at the Bottom of it we could diſtinctly ſee ſome Part of the ſuperior ſalivary Duct laid bare, with a Hole in the outer Side of it, large enough to allow the Button of a middle ſized Probe to enter it; and when he moved his lower Jaw at our Deſire, the Saliva ran out plentifully at that Oriſice. When the Jaw was not moved, a very ſmall Quantity of the Spittle ouzed out; but in Time of Dinner, it made a Napkin, laid eight Fold over the Plaiſter that covered the Ulcer wet all through.

We agreed to make an artificial Opening for the Saliva into his Mouth, which I did in the following Manner; having with two Fingers of one Hand ſtretched his Cheek outwards, I directed the Point of a large Shoe-maker's Awl, which I held in the other Hand, into the open Breach of the Duct, and thruſt the Awl obliquely forwards, through the Cheek into the Mouth, betwixt my two Fingers; then drawing back the Awl, I paſſed an eyed flexible Probe, mounted with a ſmall Cord of Silk, through the Paſſage made by the Awl, and brought it out between his Lips with my Fingers, leaving one half of the Cord hanging from the external Ulcer; then the Ends of the Seton being diſengaged from the Probe, were tied looſely near the Angle of the Mouth; and his external Ulcer was dreſſed up with dry Lint kept on with a Plaiſter. He was deſired to rinſe that Side of his Mouth frequently with Brandy; and the Sides of the external Ulcer were kept from going out too faſt, or turning callous, with the lunar Cauſtic. In leſs than three Weeks this Management had the deſired Effect, of rendering the Paſſage in which the Cord was engaged, callous, (which the Looſeneſs of the Cord, and the Want of Pain when it was drawed, plainly ſhewed;) when Mr. *Jamieſon* took out the Cord, and healed the external Ulcer very ſoon. In a little Time I ſaw our Patient at *Edinburgh*, with a firm Cicatrice on the Part where the Sore had been.

This Operation is plainly directed by my Friend Mr. *Cheſelden*, in theſe Words: "When this Duct is divided by "an external Wound, the Saliva will flow out on the Cheek, "unleſs a convenient Perforation be made into the Mouth, "and then the external Wound may be healed." None, however, of the chirurgical Writers whom I have looked into, give any Inſtance of this Operation having been formerly performed.

THE EXTIRPATION OF THE SALIVAL GLANDS.

Though many Methods have been propoſed for removing ſcirrhous and indurated Glands in other Parts of the Body, yet the Method of extirpating the parotid and maxillary Glands, which are ſometimes exceedingly tumified, and are connected with the larger Branches of the carotid Artery, has not hitherto been mentioned. What has been hitherto advanced in particular Treatiſes and Theſes, with regard to theſe Glands, relates very little to their Extirpation; an Operation which has been reckoned by ſome very pernicious and extremely dangerous.

Nor can I altogether diſcommend this Opinion; for the Branches of the carotid Arteries paſſing through theſe Glands, are ſo large, that when they are wounded, the Patient may bleed to Death, unleſs attended by a ſkilful Phyſician or Surgeon.

Tho' the Hemorrhage may, in this Operation, be very large, yet it does not follow, that it never can be ſtopped by a prudent Phyſician; for whom it is not ſufficient that he can relieve the Patient in ſlight Diſorders, but he muſt alſo make Experiments where the Caſe is doubtful, or in the Opinion of ſome, deſperate. And I have often had Recourſe to this Method of Extirpation, when theſe Glands have been violently ſwelled, and ſeverely indurated, even approaching to a carcinomatous Nature, after they had been treated by other Phyſicians with Digeſtives, Corroſives, and other Medicines.

In performing this Operation, it is neceſſary to be provided with a good ſtyptic Liquor, Linnen Rags, much ſcraped Lint, a Puff-ball, thick Compreſſes of different Sizes, and a Bandage about ſix Ells long. Then let the Patient be placed in a Seat with his Face towards the Light, having his Head and Hands ſecured by Aſſiſtants. The Operator muſt next open the Skin above the Tumor, with a longitudinal Inciſion, and carefully ſeparate the ſcirrhous or indurated Gland from the contiguous Parts with the Knife, and at laſt from the Arteries with which it is connected. The Blood then ruſhes out ſo profuſely, that near a Pound will be loſt before the Operator can lay aſide his Knife and take up the Dreſſings. He muſt therefore immediately dip a Ball of Linen Rags in the ſtyptic Liquor, and preſs it, alſo, upon the larger wounded Arteries. The Remainder of the Cavity of the Wound muſt be well filled with ſcraped Lint and dry Rags, and compreſſed with the Finger, then apply a large Piece of Puff-ball, with three or four thick Compreſſes; ſecuring the whole with a proper Bandage. Thus, by Degrees, the Hæmorrhage will be aſſuaged, eſpecially if the Patient be laid upon the Bed, and the wounded Part compreſſed for three or four Hours, by the Hand of an Aſſiſtant. But it is neceſſary to obſerve, that if the Tumor be extremely large, it may more eaſily be extirpated by a crucial Inciſion. The Patient muſt then reſt in Bed for the three or four following Days, without looſening the Bandage, to prevent a freſh Hæmorrhage. That this Time is neceſſary, I not only know from the Nature of the Wound, but from Experience; for having performed the Operation on a Girl, ſhe was impatient under the Striƈture of the Dreſſings,